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PROCEEDINGS

OF THE

AMERICAN ASSOCIATION OF MUSEUMS

VOL. VIII

1914

AM. ASSN. OF MUSEUMS - MILWAUKEE - 1914

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7. Mr. Frank H. Severance
8. Mr. Albert H. Pitkin
9. Mr. Arthur W. Slocum
10. Mr. Henry R. Howland
11. Mr. Boyd P. Rothrock
12. Miss Laura Slocum
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15. Miss Anna D. Slocum
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39. Mr. Herbert Clowes
40. Dr. C. F. Millspaugh
41. Dr. Frederic A. Lucas
42. Dr. W. P. Wilson
43. Mr. Benj. Ives Gilman
44. Mr. Henry L. Ward
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48. Mrs. A. R. Crook
49. Dr. A. R. Crook
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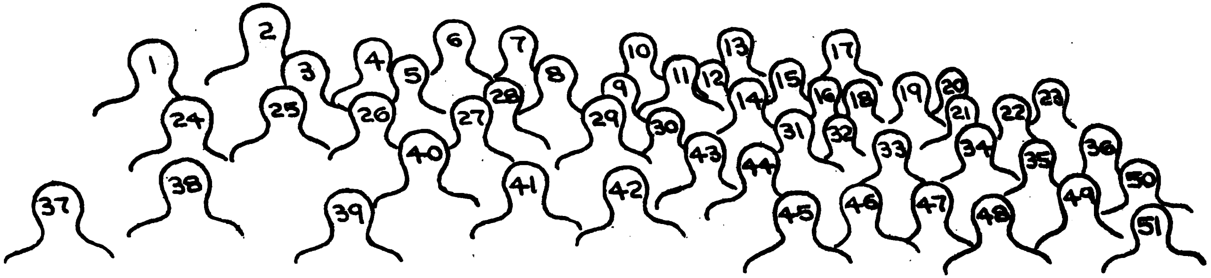

PROCEEDINGS

OF THE

AMERICAN ASSOCIATION OF MUSEUMS

RECORDS OF THE NINTH ANNUAL MEETING HELD IN MILWAUKEE AND CHICAGO

MAY 19–21, 1914

CHARLESTON, S. C.
1914

FOGG ART MUSEUM
HARVARD UNIVERSITY
GIFT OF PAUL J. SACHS
Sept. 16, 1927.

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PAUL M. REA, SECRETARY
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1914-1915

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1913-1916

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Davenport Academy of Sciences, Davenport, Iowa

1914-1917

EDWIN A. BARBER
Pennsylvania Museum, Philadelphia

FRANK C. BAKER
Chicago Academy of Sciences, Chicago

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PROCEEDINGS
OF THE
Ninth Annual Meeting
OF THE
American Association of Museums
HELD IN MILWAUKEE AND CHICAGO
May 19 – 21, 1914

SESSION OF TUESDAY, MAY 19

Morning

The Association assembled in the Public Museum of the City of Milwaukee at 9 a.m. for registration and inspection of the Museum. At ten o'clock the opening session was called to order by President Benjamin Ives Gilman.

The Chair introduced the Hon. Gerhard A. Bading, mayor of Milwaukee, who welcomed the Association on behalf of the City. The Chair responded on behalf of the Association.

The roll of attendance was then called by the Secretary and the following is a list of the members present at the convention:

ROLL OF ATTENDANCE

Miss Eleanor C. Allen, Public Museum of the City of Milwaukee, Milwaukee, Wis.
Mr. Frank C. Baker, Chicago Academy of Sciences, Chicago, Ill.
Mrs. Frank C. Baker, Chicago, Ill.
Dr. Edwin AtLee Barber, Pennsylvania Museum and School of Industrial Art, Philadelphia, Pa.
Dr. S. A. Barrett, Public Museum of the City of Milwaukee, Milwaukee, Wis.
Miss Bessie Bennett, Art Institute of Chicago, Chicago, Ill.
Mr. Maurice Block, Art Institute of Chicago, Chicago, Ill.

rule being strictly enforced, but it has resulted in bringing into the hands of the Secretary before the meeting a considerable proportion of the papers to be read. Every effort will be made to send galley proofs of papers to authors before the end of June. It will not be possible to delay the schedule with the printers if proofs are not promptly returned.

The list of new members received during the year is as follows:

NEW MEMBERS

Patrons

Mr. Archer M. Huntington, 15 West 81st St., New York City.

Sustaining Members

American Geographic Society, New York City.
American Museum of Safety, New York City.
American Numismatic Society, New York City.
Arnold Arboretum, Boston, Mass.
Bernice P. Bishop Museum Trustees, Box 466, Honolulu, T. H.
Cleveland Museum of Art, Cleveland, Ohio.
Davenport Academy of Sciences, Davenport, Iowa.
Hispanic Society of America, New York City.
Layton Art Gallery, Milwaukee, Wis.
Mattatuck Historical Society, Waterbury, Conn.
Michigan Historical Commission, Lansing, Mich.
Nebraska State Historical Society, Lincoln, Neb.

Life Members

Mr. Norman W. Harris, Field Museum of Natural History, Chicago, Ill.

Active Members

Miss Eleanor C. Allen, Artist, Public Museum of the City of Milwaukee, Milwaukee, Wis.
Mrs. Eva Rowley Bergeron, Artist, Chicago Academy of Sciences, Chicago, Ill.
Mr. Maurice Block, Assistant, Art Institute of Chicago, Chicago, Ill.
Mr. C. W. Boyle, Curator, Isaac Delgado Museum of Art, City Park, New Orleans, La.
Mr. Bernard H. Brah, Assistant, Department of Anthropology, Public Museum of the City of Milwaukee, Milwaukee, Wis.
Dr. William J. Brinckley, Assistant, Departments of Geology and Vertebrate Zoology, Public Museum of the City of Milwaukee, Milwaukee, Wis.
Mr. Neil C. Brooks, Curator, Museum of European Culture, University of Illinois, Urbana, Ill.
Mr. FitzRoy Carrington, Curator of Prints, Museum of Fine Arts, Boston, Mass.
Mr. Jesse Cunningham, School of Mines, Rolla, Mo.
Prof. Homer R. Dill, Director of Museum Exhibit of Vertebrates, State University of Iowa, Iowa City, Iowa.

Mrs. Helen B. Emerson, Curator, Art Department, Beloit College, Beloit, Wis.

Prof. N. M. Fenneman, Professor of Geology, University of Cincinnati, Cincinnati, Ohio.

Miss Margaret T. Jackson, Assistant, Department of Prints, Fogg Art Museum, Cambridge, Mass.

Mr. Thomas A. James, Curator, Maine State Museum, Augusta, Me.

Mr. N. B. Kinnear, Bombay Natural History Society, Bombay, India.

Mr. W. P. McCornack, Architect, Board of Education, Cleveland, Ohio.

Dr. Leon D. Peaslee, Curator, Department of Education, Public Museum of the City of Milwaukee, Milwaukee, Wis.

Dr. Claude C. Pierce, Surgeon, United States Public Health Service, Washington, D. C.

Mr. R. Plambeck, Photographer, Public Museum of the City of Milwaukee, Milwaukee, Wis.

Mr. T. E. B. Pope, Associate Lecturer, Public Museum of the City of Milwaukee, Milwaukee, Wis.

Mr. E. D. Putnam, Curator, Rochester Municipal Museum, Rochester, N. Y.

Mr. Paul C. Rohde, Assistant Taxidermist, Public Museum of the City of Milwaukee, Milwaukee, Wis.

Mr. E. G. Routzahn, Associate Director, Department of Surveys and Exhibits, Russell Sage Foundation, New York City.

Mr. Robert W. Sayles, Curator, Geological Department, University Museum, Cambridge, Mass.

Mr. S. C. Simms, Curator, N. W. Harris Public School Extension, Field Museum of Natural History, Chicago, Ill.

Miss Katharyne G. Slenau, Librarian, Public Library, Port Huron, Mich.

Miss Alice M. Wood, Assistant in charge of Photographs, Fogg Art Museum, Cambridge, Mass.

Mr. Howland Wood, Curator, American Numismatic Society, New York City.

There is a marked and gratifying increase in the number of new sustaining members, but a smaller increase in the number of new active members than might be desired. The loss in membership from resignations and from failure to pay dues is little more than compensated by the number of new active members.

In the spring of 1914 a special circular letter, accompanied by various announcements of the Association and of the approaching convention, was mailed to 111 persons and museums selected from the Directory of American Museums as likely to be interested in membership in the Association. This list was restricted to the states of the upper Mississippi Valley and to the section of Canada easily accessible to Chicago. But four applications for active membership have been received up to this time—a number sufficient to justify the expense of the circulars, but indicating nevertheless that no very large increase in membership can be expected from this method. It is undoubtedly true that the most effective method of increasing the membership heretofore available is active personal solicitation by present members, and your Secretary desires to urge upon every member of the Association the advantages which will accrue to the museums of the country from an increase of our membership, with the resulting increase in the scope and effectiveness of our work. Further suggestions regarding possible methods of increasing the membership and efficiency of the Association will be offered in the report of the Commission for Museum Cooperation, to be submitted later in this session.

The enforcement of the rule requiring the Secretary to withhold publications from members in arrears has resulted in the collection of $211 from 3 sustaining and 56 active members. There remain 4 sustaining and 20 active members in arrears for one or more years. By direction of the Association, the Secretary drops from the rolls each year all members two years in arrears.

It is a pleasure to report that there has been a marked improvement this year in the activity of the various committees appointed at the last meeting or at subsequent times by the President. The successful development of the Association requires not only an active and properly equipped office organization, but also the cooperation of individual members and of groups of members serving as committees in the development of plans made at the annual meetings, and of special projects authorized and approved by the Association. With such cooperation it should easily be possible to make the Association an increasingly important factor in the development of American museums.

In November, 1913, the Treasurer referred to the Secretary a letter from Mr. Gifford Pinchot, representing the McGee Commemorative Committee, inviting the American Association of Museums to be formally represented at a special meeting of the Washington Academy of Sciences to be held in commemoration of W. J. McGee, a late member of our Association. The Secretary acknowledged this letter and prepared a resolution which was duly adopted by the Council. The Council also designated Dr. Richard Rathbun to represent the Association at the commemorative meeting, or to secure the attendance in his stead of a member of the staff of the National Museum who is also a member of this Association. In acknowledging this action of the Council, Dr. Rathbun stated that he would probably be unable to represent the Association, but that he would see that it was properly represented through the National Museum. Dr. Rathbun subsequently reported to the Secretary that Mr. Frederick L. Lewton represented the Association at the meeting and presented the resolution which had been adopted by the Council.

The Secretary regrets to record the death in September of Mr. Edward L. Morris, for several years one of the most active members of the Association, and the death in April of Mr. Robert C. Hall, a charter life member of the Association and one of our hosts at the Pittsburgh meeting.

Respectfully submitted,
PAUL M. REA, *Secretary.*

The report of the Secretary was accepted, and ordered incorporated in the *Proceedings*.

Treasurer W. P. Wilson then presented a summary of his report, showing a balance on hand of $607.92. The full report was referred to an auditing committee consisting of Messrs. A. R. Crook, Frank C. Baker, and F. L. Lewton, which reported at a later session that the accounts had been examined and found correct.

The Chair then called for reports of committees.

Dr. Frederic A. Lucas, of the American Museum of Natural History, submitted the following report for the committee on art membership and on cooperation with the American Federation of Arts:

Dr. Lucas.—"I am sorry to say that there is very little to report so far as the conference with the Federation of Arts is concerned. At the March meeting of the committee of the Federation of Arts Mr. Kent was present and the matters under consideration were discussed, but the committee was unwilling to go further than to arrange to hold their next meeting (that for this year) at such time and place as would make it possible for the Association of Museums to meet there also.

"I very much regret that so far it has been impossible to do more to lessen the duplication of work and effort, and especially am I sorry to see work that distinctly belongs to the American Association of Museums, taken up by another association."

The report of the committee was accepted, and the committee continued.

In the absence of Dr. M. J. Greenman, chairman of the committee on pensions, no report was submitted. The committee has endeavored by correspondence to formulate a tentative pension scheme suitable for museums, but requires further time. The committee was continued.

In the absence of Dr. George F. Kunz, no report was made for the committee on exhibits at the Panama exposition.

On behalf of the Council, President Gilman presented for the information of the Association the following report:

REPORT ON MUSEUM PROMOTION

President Gilman.—"At the last meeting of the Association a special committee was appointed to consider the subject of museum promotion and to report to the Council, which was authorized to undertake any plan of which it approved, provided no expense to the Association was incurred. The special committee made in due course a report to the Council, recommending as follows:

> That the Council appoint a Commission on Museum Cooperation consisting of the President, the Treasurer, and the Secretary of the Association as ex-officio members, and two additional members to be elected annually by the Association—Mr. Edward K. Putnam and Dr. George F. Kunz to serve as elective members until the next meeting of the Association and until their successors are elected;
>
> That the effort be made to secure subscriptions to a special fund of at least three thousand dollars a year for three years, to be expended under the direction of the Commission for the purpose of maintaining through the year an organized effort to gather and collate helpful information and to diffuse it among museums; and in this, or any other way, to forward cooperation among the museums of the country;
>
> That the executive officer of the Commission be the Secretary of the Association; and that to enable him to undertake this additional work without detriment to his own museum, the Commission pay out of the funds it collects, the sum of one thousand dollars each year, or such further sums as the Commission may consider necessary, to the Charleston Museum, to compensate it for so much of the services of its director as may be required for the prosecution of the work of the Commission;
>
> That the remainder of the fund collected be expended, as far as is necessary, by the Secretary under the direction of the Commission for traveling expenses, clerical work, printing, postage, or in any other way calculated to promote the purposes of the Commission.

"The Council thereupon voted accepting the report and appointing a Commission for Museum Cooperation in accordance with the recommendations of the committee. Canvassing for subscriptions toward the work was begun at once by personal appeals and by the issue of a circular. Up to the first of May, the paid-in subscriptions amounted to $1360.

"On behalf of the Council I ask the especial attention of the Association to the account of the work and plans of the Commission now to be presented as its first report by the Secretary; and to urge the members to interest themselves actively in the campaign to obtain the balance of the $10,000 necessary for the proposed three years' trial of the scheme. Mr. Rea has shown his confidence in the undertaking and his sense of its importance by his liberal offer to conduct the work of the Commission during this period without pay, and the Association should show its appreciation of the opportunity by a general effort to secure the financial support necessary."

President Gilman.—"That is my report on behalf of the Council to the Association regarding the action of the Council in inaugurating the Commission. We have just been speaking about the desirability of getting new members. If through the Commission for Museum Cooperation we can show the actual value of membership in this Association, increased by the organization of permanent machinery to keep us together, I think our membership will take care of itself.

"We will hear now the first report of the Commission, and I hope that its report will receive careful attention, and that you will be ready to discuss it fully after it is presented. This is the most momentous step that the Association has taken in a number of years, if not since its formation. It either means greatly enlarged usefulness, or else it means the failure of our effort to be a national organization. I will call upon the Secretary to make this report as executive officer of the Commission."

REPORT OF THE COMMISSION FOR MUSEUM COOPERATION

Following the report of the committee on museum promotion, submitted in December, 1913, and acting under the authority conferred at the last meeting, the Council appointed a Commission for Museum Cooperation consisting of the President, the Secretary, the Treasurer, and two members to be elected at the annual meeting. The Council appointed Dr. George F. Kunz and Mr. Edward K. Putnam as the two members to serve until the present meeting.

The scope and powers of the Commission as established by the Council are those recommended in the report of the committee on museum promotion.

The Commission met in New York City on December 15, all members being present except Mr. Putnam, who was in Europe. At this meeting the Commission organized and prepared plans for the conduct of its work. Following this meeting, the Secretary devoted several days in New York and Pittsburgh to the raising of funds for the support of the Commission.

The plans of the Commission everywhere met with the most cordial reception and hearty interest. The readiness with which subscriptions were given is a strong indication that there should be little difficulty in securing the full fund of $3000 per annum for three years which the Commission considers necessary for the proper conduct of its work. It has nevertheless been a difficult matter to obtain the remaining subscriptions by mail. Personal contact is important in work of this character, and the first problem of the Commission is to complete the necessary fund to enable it to undertake the full scope of its work.

It is desirable that the Association should be fully acquainted with the general plans of the Commission and with some of the specific projects it is desirous of prosecuting, as outlined below.

It is the general purpose of the Commission to maintain a permanent organization for the purpose of gathering and collating helpful information and of diffusing the same among museums. It is proposed that the Secretary, as the executive officer of the Commission, shall visit each year a considerable number of museums throughout at least the eastern half of the country for the purpose of forming personal association with their officers, and of acquainting the Commission with the circumstances of their work, with a view to bringing these institutions into closer relations with each other and with the Association, and of promoting the free interchange of ideas and experiences. It is believed that such visits will do much to stimulate the work of curators in small museums or in isolated localities; and it has been specifically suggested that these visits might be made the means of arranging mutually advantageous exchanges of material, and in some cases of men, between museums which would not be likely otherwise to establish such relations. In particular it should enable large museums to obtain local material from many localities and to give to the museums in these localities valuable duplicate material in exchange.

It is also the desire of the Commission to prepare a series of studies of the organization and administration of museums, including the charters and articles of incorporation, constitutions and by-laws, financial arrangements, the relations of museums to state and municipal governments, and administrative methods. It is not intended that these studies shall be prosecuted with a view to reducing all institutions to one formula, but rather for the purpose of presenting the various plans which have proved successful in particular instances, and of thus offering suggestions to existing museums, or to those about to organize. This work will require the cooperation of many individuals working with the Commission, but should give results of great value to those who undertake the work as well as to museums in general. The Commission desires to gradually bring itself to a position where it can furnish expert advice on problems of this character.

The work of the Commission should afford material for and facilitate the preparation of articles of general interest suitable for publication in scientific journals and popular magazines, all of which would be calculated to increase interest in museums and their work. It is very probable that this would lead ultimately to an arrangement for the publication of a museum journal to supplement or take the place of the present *Proceedings* of the Association. The Commission would also be able to arrange with the learned societies for the presentation at their conventions of papers dealing with museums and museum subjects related to the work of these societies.

The Commission should be able to cooperate with local organizations in arousing community pride and ambition in the development and support of museums. It would mean much to those who are working locally to this end to have an officer of the Commission visit the community, give a public address, and talk with representative citizens with regard to the value of museums. Closely related to this work would be the arrangement of exchange lectures between the officers of a number of museums.

Perhaps one of the most novel suggestions which the Commission is considering is that of stimulating and developing the educational work of museums through the establishment of a moving picture circuit which would enable even small museums to bring into their work remarkable educational films which are occasionally shown in commercial circuits, but which are seldom utilized to full advantage or brought together in any considerable numbers for organized instruction. This feature of the plans of the Commission will be presented as a special subject at a later session of this meeting.

It is evident that all of these lines of work proposed by the Commission are directly related to the general purpose of the Association as stated in Article II of the Constitution, which reads:

The object of this Association shall be to promote the welfare of Museums, to increase and diffuse knowledge of all matters related to them, and to encourage helpful relations among Museums and those interested in them.

These plans are the natural fruition of the idea which has been inherent in the Association since its founding. The preparation of the Directory of American Museums was proposed as a necessary preliminary to work of this character. The Directory was intended to acquaint the Association with the number, location, personnel, collections, history, financial organization, and general activity of American museums. When the Directory was completed it was suggested to the Association that it be made the basis of studies of the character of those now proposed by the Commission. The development of this idea has always been hampered by the restricted financial resources of the Association, but the idea has never been lost sight of and the time has now come when either the Association must put itself in a position to do work of this character or be contented to restrict its activities to a pleasant and profitable annual convention, benefiting only those members who are able to participate in such meetings, and therefore necessarily limiting the services of the Association to a comparatively small proportion of the museums and museum workers of the country. The maxim of Dr. Goode so often quoted "a finished museum is a dead museum" may be applied with equal force to the national association of museums. We must either grow in usefulness or decline in stagnation. As individuals, we must all believe firmly and enthusiastically in the value of the museum idea, else we are out of place in the position which we occupy in particular museums. If then we are actively interested in our profession shall we not find personal profit and the satisfaction of service rendered in devoting a portion of our time to the promotion of the general museum idea throughout the country.

In carrying on this work as the Commission proposes we may feel reasonably assured that we shall make the American Association of Museums a vital and necessary factor in every active museum throughout the country. We shall thus secure the growing interest and increasingly close cooperation of many museum workers who are not now affiliated with us. This must inevitably redound to the increase of the membership with its corresponding augmentation of our funds, which in turn augments our ability to perform increased services.

Respectfully submitted,
PAUL M. REA, *Executive Officer.*

President Gilman.—"You have heard the report of the Commission for Museum Cooperation; what is your pleasure?"

It was moved and seconded that the report be accepted.

President Gilman.—"Are there any remarks? We shall be glad to have comments of any kind concerning this work. Those of us who have been interested in the getting up of the plan are very deeply convinced that it is important."

Treasurer Wilson.—"Mr. President, I deem this the most important educational scheme that has been proposed by this or any other organization. There are scattered over the United States, in small cities and sometimes in cities of considerable size, inactive or dormant museums, and museums which are struggling to help in educational work but lack either the means or the knowledge to do it successfully. I regard this Commission for Museum Cooperation as a force which would bring into real life some hundreds of these small museums. If we think back about twenty years and consider what the museums which we now know about were doing for public education, we shall not find very much active work; but just think of the tremendous progress that has been made in the last twenty years. Some of the large institutions are conspicuous in this development but they are not relatively more important than dozens of smaller ones that are keeping fully abreast of the times and even leading in the development of educational work. Some of these museums that are now rendering such effective service were doing little or nothing for their communities eight or ten years ago. Today they are increasing their collections and trying to bring them before the public for the education of the children and the people at large.

"I want to say right here that the really practical side of this plan has been outlined and developed by Mr. Rea himself. I think the other members of the Commission will say with me that he has done this under more or less discouraging circumstances. I went over to New York to attend the first meeting of the Commission and our president came down from Boston, because we thought it was important. After we got through with our sessions, Mr. Rea, in his enthusiasm, went out and collected some money right then in New York to further this organization. There was collected $1360 by Mr. Rea himself meeting a few prominent people and explaining the magnificent thought that ran through this new educational movement, which would really bind all of the museums in this organization more closely together, and should bring up to an appreciation of educational work hundreds of smaller ones which are not in this organization. The idea was to collect $10,000 to defray, for an initial period of three years, this work of bringing together and stimulating the smaller institutions, drawing them into educational work, and establishing closer relations between them and the larger museums.

"I do not believe, as I said before, that any more important piece of educational work has been started in recent times. I hope every individual member of our Association will be enthusiastic regarding it, and I know it will be a fine success in the end."

Mr. F. L. Lewton (*United States National Museum*).—"Mr. President, since hearing the report of the Commission and Dr. Wilson's remarks, I am reminded that within the last few months I have visited several industrial centers having a population of something over 25,000 people, where there are no museums. In each of these places, however, there has been a local exhibition of the industries and manufactures of those particular localities, mere temporary affairs, but in every case they have been interesting to the community and really show the people something of what is going on in their own cities. These exhibits might be made the nucleus of museums, and I think there is work for this Commission in visiting and doing missionary work in these larger industrial centers where they have no museums to appeal to the laboring class."

Mr. Henry R. Howland (*Buffalo Society of Natural Sciences*).—"Mr. President, I take great pleasure in seconding what has been said with reference to Mr. Rea's report of the Commission, in the hope that that work may be continued as it has been begun, and that it will help in the encouragement of smaller towns which have incipient museums, letting them appreciate the fact that in their own localities they can do on a small scale what the more favored museums have undertaken in larger communities.

"In Buffalo I have had visits during the past year from a number of people in smaller cities interested in museums which have been begun, but which have been torpid, or have accomplished but little. It has been a great pleasure to me to give them such assistance as I could from my experience and I believe that the results have been good. In museum work mutual intercourse and mutual aid should be our great aim."

Miss Delia I. Griffin (*Children's Museum of Boston*).—"Mr. President, may I speak from the standpoint of one who has charge of a brand new museum? The Children's Museum of Boston was practically founded the first of last July, and we have had a number of administrative problems confronting us since then. Had this Commission been in existence, it would have been very easy for us to have turned over to the Commission a good many of our problems, and receive a large amount of help. For instance, had we known the general plan that is followed by other museums in regard to the board of trustees, of how many members it should consist, whether certain city officials should be members ex officio, and whether the persons who support the museum ought to have a voice in the election of members, it would have been of great help to us. So I am very certain that hereafter when new museums are formed, they will turn most gladly to this Commission to learn the practice of other museums in these and many other matters.

"To speak of another matter: Very recently it was my good fortune to be in one of the smaller New England cities, where I found a museum working along by itself. The man in charge had never known that there was such an organization as the American Association of Museums. He has now become a member, and I can imagine what a help this Commission would be to him."

Miss Anna B. Gallup (*Children's Museum of Brooklyn*).—"Mr. Chairman, I have in my files in Brooklyn letters from four different localities in this country where an interest in starting these children's museums has been expressed. The people are not quite ready to initiate the work because of financial limitations, but I am assured that if this Commission were now ready to send representatives to those localities, it would bring children's museums into existence in a very short time. It seems to me that the work in this special branch of museum activity would be greatly aided by such a commission."

Treasurer Wilson.—"Mr. President, if it is still in order, I wish to say in harmony with what Miss Gallup has said about the stimulation and organization of new museums, that I hope Miss Gallup will suggest to the places and people who are trying to organize new museums to apply at once to old museums for material. I can think in my own institution of nearly a roomful of things that we have put aside and shall not use any more, but which would be of the greatest use to children's museums, and every large museum has more or less of that sort of material that has been discarded but yet would be of the greatest use to these new organizations. I hold myself in readiness to fill some of the orders of that kind for new museums for children."

Mr. Henry L. Ward (*Milwaukee Public Museum*).—"I feel that while there is a great deal that undoubtedly can be done along the lines of this discussion, we must always keep in mind the limitations and not let ourselves be carried away with visionary schemes. There is no question but that there are museums in which a certain amount of encouragement and suggestion to those in charge would be a very decided help, and yet I think of others in which no amount of encouragement will do any particular good, and the only thing that could do any good would be to remove those in charge and put somebody else in."

Secretary Rea.—"Mr. President, such a body as the Commission for Museum Cooperation ought to be able to exert an important influence in the organization of museums, representing as it would the best practice of successful museums and the opinions of trained museum administrators. I fully realize, however, that while advice and suggestion will often be asked and kindly received. we must not always expect the seed to grow. It is not many years ago that a number of us received rather overwhelming circulars announcing the organization of an ambitious and well-conceived new institution, one of whose functions was to be the maintenance of a museum. The trustees expressed their lamentable ignorance of the details of the great responsibility which they were assuming and applied to persons who, from their official positions in the Association or in particular museums, might reasonably be expected to give sound advice as to how they should proceed. I think every person who received those letters wrote a very full and careful reply. I told them that their first problem was to consider what kind of a museum they wanted, to form some notion of its scope and its relation to other lines of work, and suggested that next they find the best man available to direct that particular kind of work, and consult with him on all further matters of procedure, rather than to rush in and make a beginning which in all probability their director, when they got him later, would have to reorganize at considerable expense.

"I learned later that my good friend Mr. Ward, and several others, had given them almost identical advice; in fact, as the matter developed, it seemed that all the museum men they consulted felt that this was the one and only desirable method of procedure. So did the secretary of the board of trustees, to judge from his letters, which were most grateful in their expressions of appreciation. He said that he felt, without knowing very much about the subject, that on the face of it this advice was good. And then what do you suppose they did? They drifted along for some months collecting museum material indiscriminately, and then they got a neighboring professor to take a fatherly interest in it, which still continues. Somehow, the great vision of a well-organized, powerful museum, which the prospectus aroused in my mind, has not materialized. I have not been to see this new institution. I read its bulletins, and I see pictures of what it is doing, and I judge it has some pretty good museum cases, but I have not yet—and I may be doing it an injustice—I have not yet the slightest evidence that it is creating a permanent and effective museum organization.

"It is inevitable that such experiences should occur from time to time. If they are typical of the general method of procedure, there is certainly great need for a national organization which shall develop sufficient prestige to exert some influence. If it is only necessary to marshall a little more effectively and impressively the experience of the best museums and their experts, then it may be that a comparatively simple organization could help to correct some of the mistakes. If the director is present on the ground at the beginning and is recognized as an expert manager of the work, the early efforts will all lead directly and economically, even though slowly, to the fruition of the ultimate plan.

"If the director of a museum were able to obtain from the Commission for Museum Cooperation data covering the experiences of other museums with regard to any particular question of constitution, by-laws, selection of trustees, or any other point in the organization and administration of a museum, it would undoubtedly prevent him from making ill-advised experiments, and give his recommendations greater weight with his board of trustees.

"I feel, however, that this whole problem is not concerned so much with the particular lines of activity which the Commission may map out for itself, as with the broad question of what this Association plans to do to justify its existence as a national body, and to give an adequate return for membership fees to something more than two hundred active members who do not come to our meetings. Some of the members of this organization regularly attend the conventions, take part in the proceedings and obtain the full value of their membership in professional benefit. Other members approve the purposes of the Association and lend their support financially for a few years, but ultimately come to feel that without being able to attend the conventions the publications are not of sufficient value to justify the continuance of their membership. We need, however, the interest and financial support of all these museum workers, and we need a larger number of new members in order to continue our work on a satisfactory basis. If then we desire new members, must we not make membership so attractive as to appeal strongly to those who cannot regularly attend the conventions? There are many museums, small and large, which have not considered themselves in a sufficiently wealthy condition to contribute ten dollars a year as sustaining members of this Association, yet if we could offer them such service as this Commission proposes to render, the sustaining membership fee would seem a small price for the advantages which it would cover.

"I appreciate very keenly the full discussion we have had on this matter. There is only one side of it which has not been brought out, and that is the opposition. I would like to see the proposition looked squarely in the face in the beginning, and I would like to hear from those who are skeptical as to the value of the scheme something of the faults and difficulties which they see in it."

Dr. Frederic A. Lucas (*American Museum of Natural History*).—"Mr. President, it has unfortunately fallen to my lot for the last ten or twelve years to be the man who is called upon to see the hole in the doughnut, to see the defects of a scheme before the benefits. I fully agree with Mr. Rea that some sort of commission such as he advises or proposes would be of great benefit to us, but I fail to see that it would be of the great benefit that Mr. Rea thinks. It is going to be an expensive and difficult matter to organize such a commission that will carry with it the weight of the Association. In this country we are hampered, as they are not in England, by great distances. You can go from one end of England to the other in a day; consequently the meetings of the Museums Association are very largely attended, attended in a manner that our meetings cannot be. In addition to that, the Museums Association of Great Britain has established two conferences in between the annual meetings. Those who can participate meet at various cities and discuss practical museum methods and museum organization. If we could do something of that kind it might be helpful.

"I feel that one way to make our members who cannot come feel the existence and helpfulness of the Association would be to publish our *Proceedings* as a quarterly, to begin with, instead of annually. This is the method that was followed by the Museums Association of Great

Britain. As for museum methods, I think that every one now who is engaged in museum work goes around and visits other museums. It is a most helpful thing to visit museums and see how they are conducted, to follow their good methods and avoid their mistakes.

"Such matters as a central bureau for the gathering of information regarding films and distributing it would be very helpful. I think the publication method would be one of the best things we could do, but we are bound to be troubled by distances in this country.

"Many years ago, in 1880, a friend of mine was very desirous of founding an association of taxidermists. I joined at the beginning, but it was my unpleasant duty to see the hole in the doughnut, and I said the association could not possibly endure owing to the large distances in this country. It lasted three years. I put considerable time and some little money into it, and I felt that it did most excellent work, although it fell to pieces. This association we have formed is not going to fall to pieces, because museums are ever growing, ever springing into existence, but I feel that you cannot very well force museums upon the country. You may foster them, help them, but I doubt very much—I hate to differ with Mr. Rea—but I doubt very much the feasibility of a commission giving great aid.

"One of these days I am going to write a paper on the poverty of large museums. There is a general belief that a large museum always has a large amount of material and a large amount of time at its disposal. Very frequently exactly the opposite is the case. The larger the museum the greater are the demands upon its resources. The demands increase in geometrical ratio, while the resources increase simply on an arithmetical basis. The American Museum is unable today to furnish any very considerable amount of material. There are not enough specimens to furnish our own educational needs. In my native town there is the nucleus of an extremely good colonial museum, Pilgrim Hall. I do not doubt that many who are present have been through it, and it seems to me that it would be a very fine thing to go there and rejuvenate this museum, but I cannot do it under existing conditions.

"I am sorry to represent the opposition, but I will say to Mr. Rea that while I doubt the feasibility of the plan, I shall be very glad to do anything I can to help it."

Mr. Edward K. Putnam (*Davenport Academy of Sciences*).—"Mr. President, I merely want to say that I feel that the opportunities of cooperation among museums are so great that there should not be any question about the usefulness of the work of this Commission. I will admit that it is possible to see visionary prospects of what might be done, the rejuvenation of dozens and hundreds of defunct museums and the establishment of new museums, but if you put aside all the visionary part of the work that can be done through this Commission, and come down to some of the more practical points, such as the exchange of specimens, lectures, lantern slides, and moving picture films (if we get that started), a great deal could be accomplished. There are so many ways that the Association by some organized movement can assist museums now in existence, as well as embryo museums which we are trying to develop, trying to organize, that it seems to me the experiment is well worth taking hold of and carrying out. As it is outlined, we can do that if we raise three thousand dollars a year for a period of three years, and during that three years we should be able to demonstrate whether the Commission is able to do work that is useful and worth while. Personally, I believe it is."

President Gilman.—"In regard to this matter I would like to say just one word. I have always believed in this Association from the start. I was one of the charter members and I believe in it for the reason that museums are here to stay. Everything else comes together, why should not museums come together? This puts the Association in my mind on a perfectly impregnable foundation; it has got to exist.

"What is this Commission? The Commission is simply a means of keeping the Association of Museums on the job straight through the year. That is a great thing in my mind. It is true, as Dr. Lucas remarked, that it is very easy to over-estimate the possibilities of such a plan, but let us not expect too much My own experience is that if one is on the lookout, one finds constantly that there are opportunities when things should be turned over, and every few days something will be turned over, to the Commission for consideration and action."

Dr. A. R. Crook (*Illinois State Museum, Springfield*).—"May I ask a question? If we decide to continue this Commission will it be with the understanding that the money will be taken from the Association?"

Treasurer Wilson —"As one of the members of the Commission, I want to state that there has not been any idea of burdening the Association with a penny. If we cannot raise the money, it will have no effect on the Association; that is up to the Commission."

Secretary Rea.—"Mr. President, if we do succeed in financing this Commission, I think we shall greatly facilitate the general work of the Association. If we fail to get such help from the Commission, I think we shall have materially curtailed the work of the Association. I think it is the life-saving buoy of our whole organization, and it involves no expense whatever to the Association."

Dr. C. F. Millspaugh (Field Museum, Chicago).—"Mr. President, may I also ask just one question before we vote on the acceptance of the Commission's report? Having become satisfied that the Commission itself is to raise the money for its expenses and therefore bear the burden of the expense, does the Association bear the burden of the Commission, that is to say, are we responsible for what the Commission does, or does the Commission bear the responsibility of its action, as well as of its finances?"

President Gilman.—"I should say that the Association is responsible for the Commission. It is the Commission of the American Association of Museums."

Dr. Lucas.—"Mr. President, may I say just one word more? I feel, as the President does, that the Association should bear the responsibility of the Commission, and I feel that it is well represented. I do not feel for a moment that if we do not branch out into new work this Association is going to die and do no good to the country. I feel that the Association is going to stand. I have been through decennial periods of discontent and seen a large number of societies decennially about to disintegrate, but they are still in existence and doing better work than ever."

Mr. Douglas Stewart (Carnegie Museum, Pittsburgh).—"Mr. President, I agree with Dr. Lucas that this Association is not going to die, but I am in favor of getting all the members we can."

Secretary Rea.—"Mr. President, I wonder how many officers the members think would be at work, how many pages of *Proceedings* could be published, how many membership dues would be paid in natural course if we simply fulfilled the form of holding an annual convention? I have felt very much more strongly on this subject than probably almost any other member of the Association, with the exception of the Treasurer. I think circumstances have determined our feelings. We started years ago to publish an annual volume of *Proceedings*, which had been initiated the year before as the gift of one of our members. We were told to go on and continue it, but there was no money. What were we to do? Either suspend the publication and report back to the Association for instructions, or get members and find ways and means of pulling along, reaching for new lines of service which should make membership attractive, and so build up the Association. This year we have a gratifying addition of twenty-seven new members, but at least twenty-six names to be dropped from the rolls. Last year we lost four members more than we gained. I don't know just how we shall come out this year, but there will be little growth. The Treasurer shows something of a balance this year. When, however, allowance is made for certain peculiar features of the financial operations of the year, it will be found that it is uncertain whether we are getting ahead ten or twenty dollars, or whether we are dropping that much behind. We certainly should not have anything in the treasury at all if a few of us who knew its condition were not getting in money."

The Association then voted its approval of and confidence in the Commission for Museum Cooperation and its plans.

President Gilman.—"I have a matter that I should like personally to bring before the Association. Just before I left Boston I was asked by the Museum of Fine Arts to carry to the Association a matter which had come up before it at the instance of the Asiatic Institute in New York.

"It seems that the Asiatic Institute, which as you perhaps know is a very responsible body, of which Ex-President Taft is president and the vice-presidents are John W. Foster and Charles W. Fairbanks, has been very much exercised over the immense devastation that has taken place in China during the last few years in objects of ethnological, historical, and artistic interest. An enormous number of these objects have been destroyed or mutilated for the sake of such fragments as could be carried away and sold. A great many of these fragments have come to museums, some of them have come to our museum, and the Asiatic Institute has asked us to join in signing memorials to the governments of China and of the United States asking that they take measures to stop these depredations, and also asking us to sign a promise that we would not take advantage of these depredations by taking into our museum objects which were the result of this spoliation.

"It does not seem practicable at this time for individual museums to enter into any such agreement. One museum might refuse to buy any further objects of that kind from China, and all the rest of the museums might continue to do so. The result would be that the spoliation and destruction would go on and the one museum would be left out of the accumulations. Therefore I have drawn up the following resolutions which I submit for your consideration:

> WHEREAS, There is now going on throughout the Chinese Republic a wholesale destruction of objects of historical and artistic value for the sake of those fragments which can be removed to Europe and America; entailing an irreparable loss to China and the world, of memorials of the oldest civilization on the globe; therefore be it
>
> *Resolved*, That the Chinese Government be and hereby is petitioned to take all objects of historical and artistic interest within the Republic under the national protection; and further be it
>
> *Resolved*, That the United States government be and hereby is petitioned to support the Chinese government and people in any measures they may take to safeguard such objects.

It was thereupon voted that the American Association of Museums approves the above resolutions and in adopting them as a body recommends them to the favorable attention of all museums of art and ethnology, and refers them as well to the Commission for Museum Cooperation for such future action as may be deemed best.

Mr. Edward K. Putnam, acting director of the Museum of the Davenport Academy of Sciences, then presented the following paper:

BRIEF SURVEY OF AMERICAN CITY MUSEUMS

The publication in 1910 of a Directory of American Museums prepared by Mr. Paul M. Rea, secretary of the American Association of Museums, has made possible a study of the organization of the museums and galleries now found in American cities. That the number of such museums and galleries is increasing and that the institutions themselves are expanding is evidence that they are recognized as important factors in the higher life of a community. Museums are no longer mere collections of curiosities for the benefit of future generations. They must be of active service both to the specialist and to the general public.

An examination of the list of American museums shows four fairly distinct classes: (1) national and state museums, (2) university and college museums, (3) private museums, and (4) city and local museums. The first class is represented by the National Museum at Washington and by such state museums as those of New York, Ohio, Michigan, Wisconsin, Minnesota and Kansas. Typical university museums are those of Harvard, Yale, Princeton, Pennsylvania, Michigan, Chicago, Iowa, and California. The Thayer Museum of Lancaster, Mass., and the Walters Art Gallery of Baltimore represent the large class of private museums, generally open to the public on liberal terms. These state, university, and private museums may take the place of city museums in the special places where they happen to be located, but for the present these three classes of institutions will have to be eliminated from our discussion and the attention confined to the city or local museums, the provincial museums as they are called in England. City museums need not necessarily have been started definitely as such. They may have had their origin in the collection of one man, as the Everhart Museum of Scranton; or in the combined collection of a group of individuals composing a scientific society, as in Milwaukee and Davenport. When such a museum is once started it is not surprising that it should develop into an efficient public institution.

It is in Europe perhaps that the city museum is best appreciated. In Germany, England, Scandinavia, and most of the other countries almost any city of consequence contains its museum or gallery. American cities have not inherited historical and art collections from the Middle Ages, but in the last generation at least they are endeavoring to make up in energy and efficiency what they lack in years. Hence not only is the number of our museums and galleries growing, but those already established are constantly expanding their field of usefulness. Live active institutions are found not only in New York and Chicago, but also in St. Johnsbury, Vermont, and Pacific Grove, California. A brief survey of our cities from the museum point of view will prove instructive.

Of the American cities of over a million population, New York has the American Museum of Natural History, the Metropolitan Museum of Art, the Brooklyn Institute and Children's Museum, the Staten Island Association, the Zoological and Botanical Gardens, as well as a number of more special museums. Some of these institutions are so extensive as to be almost national rather than municipal. Chicago has the Field Museum of Natural History, the Art Institute, and the Academy of Sciences. Philadelphia has the Philadelphia Museums, the Pennsylvania Museum in Fairmount Park, the Academy of Sciences, the Academy of Fine Arts, and various historical and other special museums.

There are five cities between 500,000 and 1,000,000 population. Of these St. Louis has its municipal City Art Museum and its Educational Museum, as well as the Missouri Botanical Garden and the Missouri Historical Society. Boston has its Museum of Fine Arts, its Society of Natural History, and its new Children's Museum. Cleveland has received bequests for a museum of art. Baltimore has the local museum of the Maryland Academy of Sciences and the Walters private art gallery. Pittsburgh can thank Andrew Carnegie for his contribution of $10,000,000 for the building and endowment of the Carnegie Institute, which contains not merely the customary city library, but an art gallery, museum, and music hall as well.

Of the ten cities from 300,000 to 500,000 population, Detroit has a museum of art and a municipal aquarium; Buffalo, the Albright Art Gallery, the Society of Natural Sciences, and the Historical Society; San Francisco, the California Academy of Sciences, the Memorial Museum in Golden Gate Park, and the San Francisco Institute of Art; Milwaukee, its large municipal Public Museum and the Layton Art Gallery; Cincinnati, the Art Museum of the Cincinnati Museum Association and the scientific museum of the Society of Natural History; Newark, the Public Museum; New Orleans, the new Delgado Museum of Art; Washington, the Corcoran Gallery of Art, as well as the National Museum; and Los Angeles, the Southwest Museum and the Science and Art Museum of the School Board.

Of the ten cities from 200,000 to 300,000 population, Kansas City, Seattle, Indianapolis, Providence, and Portland have art galleries. Providence has the Park Museum; Rochester, the Municipal Museum; St. Paul, the Minnesota Historical Society museum; and Denver the Colorado Museum of Natural History. Jersey City does not report any and Louisville does not seem to be now adequately represented.

Of the twenty-two cities between 100,000 and 200,000 population, only ten or twelve have noteworthy museums or galleries. These are the Ohio State Archaeological and Historical Society Museum of Columbus, the Toledo Museum of Art, the Oakland Public Museum, the Worcester Art Museum, the Syracuse Museum of Fine Arts, the Everhart Museum of Scranton, the Valentine Museum of Richmond, the Omaha Public Museum, the Public Library and Museum of Dayton, the Kent Scientific Museum of Grand Rapids, and the Albany Institute. New Haven and Cambridge have the museums of Yale and Harvard respectively. Atlanta, Birmingham, Memphis, Paterson, Fall River, Nashville, Lowell, Spokane, and Bridgeport either have small or no museums.

Cities over 50,000 and under 100,000 in population are on the average not so well supplied with either art galleries or museums, but there are some interesting exceptions. Hartford is provided with the Wadsworth Athenaeum; Reading with the Reading Public Museum; Salt Lake City with the Deseret Museum; Springfield (Massachusetts) with the Art Museum and Museum of Natural History, both belonging to the City Library Association; Erie with the Erie Public Museum; and Charleston (South Carolina) with the Charleston Museum. In addition state museums are located in Trenton, Harrisburg, and Springfield (Illinois). Waterbury and Wilkes-Barre have live historical museums. This accounts for eleven out of fifty-nine cities. Of the other forty-eight cities, a score have smaller historical, scientific, or art collections, or museums of some sort, but about thirty are reported as having no museums.

In the twenty-five cities from 40,000 to 50,000 population there are several noteworthy museums and art galleries. Among these there are the California Museum Association of Sacramento, the Essex Institute and Peabody Academy of Sciences of Salem, the Kansas Historical Society of Topeka, and the museum of the Davenport Academy of Sciences. The Davenport Museum is interesting in that it was organized as early as 1867. Other cities of this size have smaller museums, some private, some university or college, some state, and some in connection with libraries and local historical societies. Fourteen have no museums.

Between 10,000 and 40,000 population there are over four hundred cities, most of which do not appear as having either museums or galleries. There are of course many future museums now in an embryonic state and some that are already in a position to be ranked with those of larger cities. Among these are the Arnot Art Gallery of Elmira, the Berkshire Museum of Pittsfield, the new Hackley Art Gallery of Muskegon, and the new Montclair Art Museum.

Some enterprising towns and villages under 10,000 refuse to get along without the advantages the larger cities enjoy in museums and art galleries. To pick out a few of these, there is the endowed but live Fairbanks Museum of St. Johnsbury, Vermont; the Merrick Gallery and Museum of New Brighton, Pennsylvania; the St. Augustine Institute of Science; and the museum supported by the school board and filling 5000 square feet in the public library of Greenville, Ohio.

From this rapid survey of the actual situation in regard to museums and art galleries in American cities of different sizes, it is evident that there is great variety in the form of organization. Even with the national and state museums, the university and college museums, and the private museums all eliminated, the city museums that remain range from separate corporations, like the Boston Museum of Fine Arts, which receives no city aid of any kind, to purely municipal institutions, like the Public Museum of Milwaukee. Between these classes are numerous museums with their own corporate existence, but with substantial recognition by the municipality either in the shape of a site, a building, or a regular appropriation for maintenance. Typical of this class are the great museums of New York and Chicago.

While practically every city in the country maintains a public library as a regular legitimate form of city activity, the same as public schools and parks, very few, hardly a dozen, have proper municipal museums or art galleries. In this the situation is different from that in Europe, where it seems to be more natural for the municipality to support the museum and gallery than the library, which is apt to be left to private enterprise. But it is not to be expected that paternalistic or socialistic movements should be altogether consistent in matters of learning any more than in matters of business. Fortunately the people of the United States have not waited for the municipalities to found and maintain museums and art galleries. Generally such institutions have had their origin in the enthusiasm and public spirit of some individual or of some art, historical, or scientific society. This is true even of many organizations which have since received city aid in some form. It is also true of most of the municipal museums and art galleries.

While the number of institutions receiving city aid is constantly increasing and may be expected to increase even more in the future, there are many organizations maintaining museums or galleries entirely through their own efforts. In this class come the museum and gallery of the Carnegie Institute of Pittsburgh and the Boston Museum of Fine Arts, both in monumental buildings and both with large endowments. Other museums of this class are the Boston Society of Natural History, the Philadelphia Academy of Sciences, the Maryland Academy of Sciences at Baltimore, the Peabody Academy of Sciences and the Essex Institute at Salem, the Valentine Museum at

Richmond, the Cincinnati Society of Natural History, the Davenport Academy of Sciences, and the Deseret Museum at Salt Lake City. Art Galleries without city aid are, in addition to those of Boston and Pittsburgh, the Wadsworth Athenaeum of Hartford, the Layton Art Gallery of Milwaukee, the Portland Art Association, the San Francisco Institute of Art, the Toledo Museum of Art with its beautiful new building, the Corcoran Art Gallery of Washington, and the Worcester Art Museum. Cleveland's new museum of art will be independent. Many historical museums, large and small, have also received no assistance, among them the Chicago Historical Society, the Western Reserve Historical Society at Cleveland, and the Mattatuck Historical Society at Waterbury.

None of the institutions here named, so far as can be learned, receive any city aid. Their buildings, as well as their sites, have been secured by gift or by subscription. Their collections have been presented, or have been gradually accumulated. Their support comes from membership fees, from subscriptions, or from endowment. Only rarely is there an entrance fee of more than a nominal amount and often they are open as free as the municipal institutions. They are serving the public as well as science or art, and in doing so they are performing a public function, but they ask and receive no favors. To be sure their buildings and collections are practically always exempt from taxation, but by paying taxes on income-producing property they often actually contribute toward the expenses of the city. On the other hand they are free from the influence of city politics.

That the public work done by these museums and galleries comes to be appreciated by the tax-paying public is shown by the large number of scientific, historical, and art associations that have received or are now receiving city aid, although they still retain their own organization. This city aid may be in the form of a site, or of a building, or of the maintenance of the building, or of a general appropriation for the museum's activities. In this class are found most of the large museums and art galleries of the country, such as the American and Metropolitan museums of New York and the Field Museum and the Art Institute of Chicago.

A common form of aid extended by cities to these institutions is to grant them a building site, which with one or two exceptions is in a park. New York has done this for the American and Metropolitan museums and the Brooklyn Institute; Chicago for the Field Museum, the Art Institute, and the Academy of Sciences; Philadelphia for the

Philadelphia and Pennsylvania museums; Buffalo for the Albright Art Gallery and the Buffalo Historical Society; San Francisco, for the California Academy of Sciences; Cincinnati, for the Cincinnati Museum; New Orleans, for the Isaac Delgado Museum of Art; Denver, for the Colorado Museum of Natural History; and Scranton, for the Everhart Museum. The appropriateness of locating a museum or art gallery, whether municipal or not, either in or facing a park or other open public space is generally recognized. The open space furnishes a proper architectural setting for the building, and gives it light and air, and comparative freedom from dust, noise, and fire exposure. On the other hand, the museum or gallery, with its attractively displayed collections, proves a valuable addition to any park plan.

For most of the institutions for which sites have been granted, the city has gone further and either erected the building or contributed toward its erection. Exceptions are the Field Museum of Chicago, the Albright Gallery of Buffalo, the Delgado Museum of New Orleans and the Everhart Museum of Scranton, which were built by gifts or bequests of individuals, and the Art Institute of Chicago, the California Academy of Sciences at San Francisco, and the Cincinnati Museum, for which there were endowments or more general subscriptions. Other museums for which the city has either erected buildings or contributed toward their erection are the Detroit Museum of Art, the Charleston Museum, and the Staten Island Museum. In some of these cases the city has retained the title to the property, the museum holding under a lease or contract, so drawn as to safeguard the interests of both parties. This is the arrangement of the New York museums which has been frequently followed. In other cases there has been a deed to the institution. Special legislative action has been secured when needed to provide for the arrangement.

Where the city has not gone so far as to erect a building it has sometimes allowed museums or art associations the use of space in library or other city buildings. Of the larger cities Buffalo, Newark, Minneapolis, Seattle, and Syracuse have all allowed museums or galleries quarters in their public library buildings. The same thing is done in a small way in Louisville and Fort Worth.

Not only have municipalities assisted museums and art galleries to secure sites or buildings; even more frequently they have provided for maintenance. New York City pays annually something like $700,000 for the support of the various museums, galleries, zoological gardens, etc., in Manhattan, Brooklyn, and Staten Island. Chicago by a tax levy pays $65,000 to the Art Institute, while the Academy of Sciences receives $5000 from the Lincoln Park commissioners, who also heat, light, and keep up the building. When its new building is ready on the Lake Front, the Field Museum hopes to receive about $100,000 a year through taxes. Detroit, Buffalo, New Orleans, Indianapolis, Denver, Syracuse, Scranton, Albany, Springfield (Massachusetts), and Charleston (South Carolina), contribute from $1500 to $20,000 per year to their museums and galleries. These appropriations are sometimes variable, are sometimes fixed annual sums, and sometimes based on a tax levy, of say one mill or one-half mill to the dollar.

While these public institutions that receive city aid in sites, buildings, or maintenance, retain their own organization and individuality, arrangements are commonly made for municipal representation on their boards, either by an ex-officio member, or by appointment by the mayor or council of a certain number of citizens as members to represent the city. Reports of the disbursements of funds contributed by the city are also expected. Sometimes restrictions are made on expending city money for the purchase of collections or the support of scientific expeditions. In other cases the appropriations are for specific purposes such as the upkeep of the building or for educational work in connection with the public schools. So too there are generally requirements that the museums shall be open to the public free a certain number of days a week. In extending aid to these institutions the municipality justifies itself on the grounds that they are working for the public good. Before receiving any city aid they have almost without exception already demonstrated their usefulness. They have been the recipients of generous gifts of collections, buildings, or endowments and in exchange for city aid of some sort all their resources are made available for the public. For their active workers they have drawn about them men devoted to art, history, or science. They are able to enlist a high class of business or professional men to serve as officers or on their boards of trustees and special committees. The public, therefore, has the benefit of what is generally an effective organization, both as to material, means, and men.

In a dozen or fifteen cities the municipality has either taken over a museum already established or in rare cases has established a museum of its own. These of course become strictly municipal museums or art galleries. The Philadelphia Museums, generally known as the Commercial Museum, inherited large exposition buildings and receive $60,000 a year from the city as well as aid from the state and outside sources. The City Art Museum of St. Louis also occupies an exposition building and is authorized to receive a tax levy which would bring in $120,000 a year. For the Public Museum of the City of Milwaukee, the city has spent about a million dollars in buildings and contributes about $80,000 a year for support, in addition to which the school board contributes an additional sum of $2500 for educational work. The Park Museum at Providence has a building built for it by the city and receives $5000 a year for support. The Rochester Municipal Museum, a comparatively new institution, uses space in a building in Exposition Park and receives a small annual appropriation through the library board. The Oakland Public Museum receives $10,000 a year for support. The Kent Scientific Museum of Grand Rapids occupies a building which cost the city $40,000 and receives $7000 a year through the Library and Museum Commission. The Reading Public Museum uses an old high school building and is maintained by the school board.

In a number of cities the public libraries have been the recipients of scientific, historical, or art collections which have grown into what are practically museums although they may not be so called. Among these museums in libraries are those of Kansas City, Omaha, and Erie, all of which possess creditable collections capable of expansion and development. In other cities the 'collections' in libraries may be looked upon as in a passive state, or as in storage, or simply as cases to accumulate dust and worry the librarian. Yet such collections often contain much of interest and of educational value, and they may grow into real museums before the people of the city realize it.

Two cities, St. Louis and Los Angeles, maintain well-organized educational museums in connection with the work of the public schools. Both are distinct institutions, in this differing from the arrangement in most cities by which the facilities of the regular museums or of children's museums are made use of for this extension work in the public schools.

An examination of these municipal museums proper shows that only in Providence has a building been erected exclusively for museum purposes. The handsome building in Milwaukee is shared with the library. Exposition buildings have been utilized in Philadelphia and St. Louis and buildings for other purposes have been adapted in Rochester, Reading, and Grand Rapids. Space in library buildings is utilized in a number of cases, school buildings in others, and in one instance, Portland (Oregon), space in the city hall.

So far as organization is concerned, the larger municipal museums have their own boards of trustees who are generally appointed rather than elected. Others are under either the library or school boards, or in one or two cases under park commissioners.

The park boards have very generally been active along an allied line—the zoological gardens or 'zoos' which are found in the parks of approximately one-half of the cities over 40,000. Of these zoos, those of New York and Philadelphia are unique in being managed by zoological societies instead of directly by the city, although both are maintained chiefly by city appropriations. The New York aquarium is also managed by the zoological society, but the large Detroit aquarium is under the department of parks.

This attempt at classifying American city museums and galleries has shown that some are maintained by societies or corporations without municipal aid of any kind. Others are maintained by societies or corporations but have received municipal aid in sites or buildings or in appropriations for maintenance, still others are municipal. In each of the classes there are successful museums and in each of the classes others less successful. In other words success depends more on the individual museum than on the system. So far as the system is concerned, this study of American city museums seems to indicate that perhaps the best results are obtained by museums having their own organization but receiving municipal aid in return for their public service—a sort of partnership between the institution and the city. This arrangement seems to retain the advantages both of the separate corporation and of the municipal institution, and to be fairly free from some of the disadvantages of each. It has proved successful in New York and has been frequently adopted elsewhere, although local conditions may make some other form of organization more desirable. What a city museum really needs, in addition to an established record for usefulness, is a building, collections, an assured income, and men. By what system it gets these things is less important, provided only it serves science, art, and humanity.

President Gilman.—"I think we are all very much interested in this paper of Mr. Putnam's."

Dr. Oliver C. Farrington (Field Museum, Chicago).—"Mr. President, it seems to me this paper shows what an excellent field there is for the work of the Commission which was talked about this morning."

The Association here adjourned for luncheon as guests of the Milwaukee Public Museum.

SESSION OF TUESDAY, MAY 19

Afternoon

Following the luncheon, the Association reconvened at 2.30 p.m. at the Milwaukee Public Museum.

President Gilman.—"The program for the afternoon begins with a discussion of 'The Use of Museum Objects for Instruction in the History of Civilization.' The matter will be treated in three reports and followed by discussion, the first report being that of Dr. Lucas."

Dr. Frederic A. Lucas, director of the American Museum of Natural History in New York, then presented the following paper, written by Mrs. Agnes L. Vaughan, late assistant in the department of public education in the American Museum of Natural History:

THE BACKGROUND OF HISTORY

"The works of man's hands are his embodied thought"

In 1911, in connection with the consideration of ways and means by which museum work could be correlated with the systems of teaching bodies of all kinds, I visited a number of public schools to confer with the principals in regard to the courses of study which the museum exhibits would illustrate or supplement. The obvious connection of nature study and geography received due attention, and then I suggested that classes should visit the museum to study the beginnings of human invention and industry. The study would serve a threefold purpose: To give the background of history; to arouse interest in and respect for human labor; and to show the children how to view the museum collections intelligently.

A class of thirty-five boys, about twelve years of age, visited the American Museum in charge of a teacher, and were met by the writer in an assembly room, in which had been placed a collection of objects consisting of implements of stone, wood, shell, and gourd; baskets;

pottery; and weapons; all of which the children might handle. The theme of the lesson was man's early inventions, and the increase of his power over matter, illustrated by the evolution of his tools. Another lesson was concerned with fire-making, preparation of clothing, and the beginnings of art—art and invention the twin manifestations of the creative faculty of the human race.

The interest taken in this experiment led to the more elaborate course of study undertaken this year with a group of students from the New York Training School for Teachers. It was considered that the experiment would be more valuable in this museum, if made with teachers rather than with a group of children.

The class met on Monday and Thursday afternoons for a course of nine lessons, as tentatively outlined below.

THE BACKGROUND OF HISTORY

A study of the development of man through early material culture

1. Examination of skeletal remains. Eoliths. Paleoliths. Neoliths. Early work in metal. *Hall of Archeology—antiquity of man.*
2. Visit to ethnographical halls. Report on implements in stages already discussed. *Mexican Archeology. Peruvian and Indian halls.*
3. Shelter and housing. Effects of climate and environment. Materials, etc. *All ethnological halls.*
4. Food. (a) Hunting, trapping, etc. (b) Gathering of vegetable food. Early agricultural implements. (c) Fire-making. (d) Preparation of food; one simple method and one distinctly elaborate method of preparation (e. g., farina).
5. Clothing. Material; skins, bark, etc. Textiles. One-piece or cut garment. Sewing, etc. Effect of climate, etc.
6. Basketry and textiles. Simplest form of loom. Nature of materials used. Manner of living among the tribes adept as weavers.
7. Pottery. Simplest methods of moulding clay into vessels. Possible origin. Connection with baskets. Imitation of natural forms. Gourds, shells, etc. Moulded and coiled vessels. Handles. Material. Method of firing.
8. Ornament and design. Beginnings of art. Realistic art; painting and petroglyphs. Carving and incised drawing (engraving) on shell, bone, or ivory. Decorative design.
9. Evolution of writing. Picture writing. Hieroglyph. Ideograph. 'Phonogram,' etc.

The first lesson stated the general theme: The development of the human mind and the origins of society, as illustrated in material culture. On the blackboard was figured a table showing the glacial epochs in relation to the human races and culture stages. A brief introductory talk explained the purpose of the study and offered for discussion the following statement: Invention is that faculty of human intelligence that initiates the production of articles for the satisfying of human needs. It is the parent of the art as well as of the utilitarian impulse. Invention is followed by imitation. Continued imitation tends to degeneracy of form. A stimulus is given by the entrance of some new factor which breaks up the repetition and leads to fresh invention. New factors may be briefly noted as: accident, or natural crises; contact (communication); discovery of new material, or change of locality. The mental factors are: association—leading to language, cooperation, social organization; knowledge, the storing of observation and experience, and the power to utilize knowledge. The practical purpose of invention and labor is the control of environment; the abstract aim is joy.

The utilitarian impulse of the inventive faculty takes the shortest path to direct use; the art impulse leads in two directions, toward the perfecting of the tool to its use (symmetry), and towards art as an end in itself. In modern life we differentiate these directions as 'applied' and 'fine' art.

After this introduction and an explanation of the table on the blackboard, the class visited the collections of early human remains, and the paleolithic and early neolithic collections from Europe. We noted the variations in skeletal structure, the crudity of the earliest handiwork, the eoliths, and the length of time traversed by the earlier stages of culture. The geographical and climatic surroundings of the early races of Europe were described to suggest the influence of geographic environment, both stimulating and limiting. A list of books for reference was given to the pupils.

The remainder of the lessons did not deal with chronological sequence, but with stages of culture in various areas. Each lesson consisted of an outline, a short talk, and an examination of objects in the exhibition halls. This illustrative material was selected with the greatest care; each lesson was prepared with close study of authorities, and consultation with members of the staff of the department of anthropology, who were cordially helpful. The itinerary was planned also to keep the synoptic sequence as nearly as possible, without an undue amount of traveling.

The studies that seemed to arouse the deepest interest on the part of the class as a whole were those which dealt with Food and Beginnings of Art, although no lesson failed to receive a vote.

I used the outline of the lesson on food for other classes also, adapting it to the age of the pupils, and to other entering factors.

This lesson was difficult to arrange because of the great quantity of illustrative material, and the necessity for condensation. The outline read as follows:

FOOD

Specialized implements. Social significance. Magic and religious observances connected with food.

- Animal food (generally work of men).
  - Fishing.
  - Hunting.
  - Development of weapons of offense.
    - Domestication of dog.
    - Trapping.
- Vegetable food (generally work of women).
  - Pre-agricultural.
    - Gathering wild plants (roots, seeds, fruit).
    - Baskets, bags, etc.
  - Horticulture.
    - Transplanting wild plants.
    - Gardens or small planted areas.
    - Tilling the soil.
      - Early implements.
  - Agriculture.
    - Eastern Hemisphere.
      - Domestication of animals.
    - Western Hemisphere.
      - Irrigation.
  - Preservation and storage of food.
    - Drying.
    - Freezing.
    - Meat platforms.
    - Granaries.
      - (Domestication of cat?)
  - Fire-making.
    - Preparation of food.
      - Simple to elaborate methods.

For the illustrations and the filling in of the outline, we visited the Eskimo collection first. We had previously made a general survey of this hall in the second lesson in our attempt to reconstruct a view of paleolithic man, "our contemporaneous ancestry," in Thomas' apt phrase.

On this visit relating to food, we paid particular attention to the fishing and hunting implements, snares, and every contrivance for the killing or capture of animals. We noted the ingenuity, the invention displayed in the production of specialized forms, such as the harpoon, bone bow, throwing stick, and in connection with cooking, the lamp. The models of the women fishing and cooking received due attention, also the small model of the stone storage platform for meat.

The scanty stock of household utensils of the Eskimo speaks for the lack of variety in their diet and in the methods of its preparation as well as the scarcity of material. Comparison was made between the coarse whalebone and bone dishes of the Eskimo, and the splendid carved food-bowls and spoons of the northwest coast Indians. I told the class some of the food tabus of the Eskimo, and related the ceremonial proceedings following the killing of a bear for the purpose of propitiating the guardian of the bear's soul. The fishing tackle and nets of the Haida next received attention; also the fish and mammal traps of the northwest coast tribes; and the model of the Kwakiutl woman drying salmon on a rack and boiling water by means of hot stones.

Our next focus of attention was the exhibit of the Indians of the Plains, where we noted the bison hunting, the actual weapons, and the famous Catlin paintings; the method of drying and of transporting meat, boiling in skins, and roasting on a stick. The scarcity and crudity of utensils was again noted. As an example of a simple method of food preparation, we studied the making of pemmican. A glimpse of the ceremonial regalia of the Buffalo Societies gave a suggestion of the social and religious developments connected with the food supply, and in a subsequent lesson the same point was emphasized by a more detailed account of the elaborate ceremonies of the southwestern Indians, inspired by the growing of maize.

The remainder of the lesson was particularly devoted to vegetable foods: the acorn 'industry' of the California Indians; maize, and the variety of utensils used in its preparation, metate and muller of the Southwest, wooden mortar and pestle of the Iroquois, baskets, pottery, and so forth, including a glimpse of some leathery cooking tortillas form northern Mexico, and the personal note that sometimes renders a topic more vivid—my recollections of a lunch in an Indian camp, in which curiosity was thoroughly satisfied at the expense of appetite!

After a view of the fire-making collection, we climbed to the South American Hall and examined digging-sticks, stone hoes, and Peruvian copper hoes; the 'chuñu,' or dried frozen potato of the Andean tribes; and wound up the lesson with an example of an elaborate process of food preparation—the Colombian conversion of *Cassava* into the edible product, tapioca.

The lesson consumed more than the regulation time, but the interest of the class insisted on there being no abbreviation. A peripatetic lecture has one great advantage over the stationary variety—the audience has no opportunity to get sleepy and its attention is constantly renewed.

At the close of the course, the students were asked to write brief papers answering the question: How do these lessons apply to, or how can you adapt them to, the teaching of history in the public schools?

Quotations from the replies are given: "History as taught in the public schools is mostly concerned with battles and biographies. Mention is made of the Indians, but largely in connection with the poem of Hiawatha, so that Indians seem like fictitious characters to the children. These studies in the museum will serve to make the Indians more real." In several of the replies we find that geography, which has tended to absorb the natural history studies in the public schools, is usurping the functions of history also.

"In the teaching of geography these lessons would be very valuable."

"Geography teaches manners and customs of peoples, and these lessons will help to make geography more real and human."

"The new syllabus of history has this point for discussion in the seventh grade. Fire has aided civilization. By showing the children the different stages of development of the human race, this point may be shown to advantage."

"For the teacher of the upper grades, where the pupil takes a broader view of the study of history, these lessons are *invaluable* [*sic*]."

All the replies agree that the study is beneficial to the teacher, broadening her own knowledge, and giving her a training in the use of museum exhibits which will be of assistance to her when she brings classes to the museum.

One fact particularly noted, and which emphasizes again the value of visual instruction, was the fixing in the memory of the students of the points illustrated by actual objects. A statement made in the classroom is noted in writing and visual memory comes to the rescue by means of the written symbol, but in the study of objects no notebooks were required.

The lessons should be expanded, if the experiment was to be followed by regular courses of study. Modifications in a syllabus are invariably suggested when the actual studies are made, and in a museum where the collections are so large and varied, the number of illustrations can be multiplied, and a greater number of valuable points in development can be brought out. Magic and religion should be included; burial customs, only mentioned in this experimental course of lessons, should be given a more detailed and careful study; and in every case more time should be given to explanation of the human social significance of all the activities manifested in material culture.

In the history department of Columbia University, a great deal of interest was displayed toward this work. Professor Shotwell and a large group of his graduate students visited the museum for a lecture and for a glimpse of the collections in connection with a specific outline similar to one of those used in the experimental work. The students were nearly all connected with educational work in various parts of the country and a part of the discussion was concerned with the encouragement they could give to local museums in regard both to forming collections and to the use of the material in school work. The fall courses at Columbia contain the study of social origins, and I had discussed with Professor Shotwell the preparation of museum studies to correlate with these courses. But, owing to the severing of my connection with the museum, this work has been abandoned.

W. I. Thomas gives this wide program to the student of history—"(1) A sound and comprehensive knowledge of biology, (2) even more particular knowledge of psychology, and (3) very intimate knowledge of anthropology and ethnology."

In view of this growing tendency to regard history less as a chronicle of events and more as social development, it seems to me that the museum studies will be increasingly valuable to students and to teachers.

Dr. Lucas.—"Mr. President, I might add that the statement that this work will be abandoned may be a little premature. It is entirely probable that it will be taken up again in the fall."

Miss Anna B. Gallup, curator of the Children's Museum in Brooklyn, presented the following paper written by Miss Agnes C. Bowen who took charge of the work in state and local history in the Children's Museum:

THE USE OF MUSEUM OBJECTS FOR INSTRUCTION IN THE HISTORY OF CIVILIZATION

This special work in history was placed in my care by a sub-committee of the Woman's Education Association of Boston. A club of eleven children, organized on Wednesday, March 25, 1914, held two meetings each week for six weeks. With one exception the members came from a public school near the Children's Museum. They were chosen because of their intelligent interest in history and were from ten to thirteen years of age. American, Irish, German, Scandinavian, and Hebrew nationalities were represented. It was desired to have the club members from one school, if possible, because the reflex could be more easily observed.

PLAN AND SCOPE

In expressing their desire that the work be done, the sub-committee asked:

"Could the children be set free by a skilful teacher in the field of history (including literature and the arts), filled with all the varied activities of man, and through their own aptitudes and interests group themselves together to study that part of life which especially appeals to them, whether *material life* (food, housing, clothing, means of existence), *psychic life* (games, recreation, fine arts, religion, myths, and sciences), or *social life* (home life, war and commerce, social organization, international organization).

"Such a course should be unconsciously to the pupil a test of his capacity and interests, and an aid to the teacher in vocational guidance. Covering a wide range of human nature, it offers under a wise teacher food for the intellect, will, and emotion. If either one of the three loses its hold, life becomes dwarfed and abnormal, for it is upon the happy cooperation between these that a pupil's efficiency and happiness depend."

A tentative outline provided for a plan that would offer a few well defined facts, making each sufficiently prominent to engage the child's mind and to form a nucleus about which could gather whatever information the child should acquire in later life.

The plan permitted the use of material in the history collection of the Children's Museum. Its scope included the presenting of cumulative evidence in favor of good manners and real friendliness in the individual, and hence in groups of individuals composing the political divisions of the ward, the city, the state, and the nation, for Americans need to appreciate the value of international courtesy. In studies of individuals in Brooklyn who have made their mark for good upon the world, the children perceived the advantage of strong character and a sweet nature, and the necessity for obtaining a good education from whatever source.

Group topics were: (1) Geology of Long Island; how the land was prepared for the people, (2) The people: Indians, Algonquins, Whites; discoveries, (3) and (4) The Dutch rule, (5) The British rule, (6) The Revolution, (7) The War of 1812, (8) Up to and including the War with Mexico, (9) and (10) The Civil War, (11) After the Civil War, (12) The War with Spain and since, finishing with a forward look and a plea for peace—but not at any price.

1. The geology of Long Island. How the land was prepared for the people. This topic began with the nebula hypothesis, which was quite familiar to the children through museum lectures, but none had connected Long Island with it in the line of descent. One of the boys said, "We hadn't connected it up in our minds." Nor had they applied familiar facts in geology to the immediate locality. Only one knew that Brooklyn is upon one end of a terminal moraine which extends the length of Long Island and out to sea, appearing in line in other islands in the Atlantic Ocean. They all "love" fairy tales. So I caused the forces of nature to be represented in fairy tale form, dividing the children into sprites of the ocean and of the ice. We here used the sand table. The ice-sprites pushed sand (in which bits of coal and small geological specimens represented boulders) against a line of waves, represented by the fingers of the ocean-sprites. Both ice flow and waves were very lively; sometimes one prevailed and sometimes the other, as I had explained would happen, but at length we had the terminal moraine of an ice sheet which could be recognized even by one lacking in imagination. Then we traced the probable line of glacial streams, found how potholes and eskers were made, how till was packed, how peat bogs formed, and how animals made trails where glacial streams had caused depressions. Samples of the clays

of Long Island, the fossils found here, peat, marcasite and lignite were used.

2. For the second topic—The people: Indians and White Men—the museum history collection furnished plentiful illustration in local material, as well as in an exhibit group of Gowanus Indians digging clams for food and wampum. Long Island was the 'mint' of the Indians. Some of the children had never before observed these things. On looking at them with a special object in view, one said that studying the collection in sequence "makes it seem a whole lot more." That the trouble Hudson had with the Indians was the result of impertinent, rude, and cruel treatment of the red men by members of his crew, is a fact that the children saw for themselves. This was the first study of the positive value that exists in good manners.

Study of the Dutch rule, (3) and (4), and the British rule (5), up to and including the War of 1812 (7), occupied the other meetings. Brooklyn in the Revolution (6) was omitted because the children were reasonably well informed about that. One or two brief papers were submitted just to 'thread up' the history. The rule of the first three directors of the Dutch Province was interpreted through the life of Captain David Peterson De Vries, a truly noble and handsome man, genial and kindly, absolutely honest and a diplomat. His is a hero story to appeal to child or adult. The magic by which he bound those fierce Indians to him was that of justice and the 'square deal,' joined to enough imagination to make him able to put himself in the Indian's place, also a quick sense of humor. I told the dramatic stories about him, presenting scene after scene, "where he always makes good," said one of the girls. At length, Edith Lipitz said, "I see why we are studying history this way. It is to get character out of it. Isn't it Miss Bowen?" I answered, "Yes, I am glad you see that." Then I asked if events of those days have any parallel now; if any strong, intelligent nation of today is dealing with primitive folk? They thought a moment and said, "It is like us with the Philippines." I asked if anything else could be gotten out of our study of DeVries, the Indians, and the directors of the Dutch Province, and Edith answered slowly, as if the idea was formulating itself as she spoke, "Yes. It is to send always good men to the Philippines. Friendly men, who can understand the natives. Men who are just and kindly." This led to a talk on civic and national duty in which they became much interested and rather excited.

We all felt quite sorry for Peter Stuyvesant, because he came to the

Province at such a difficult time. Under "British rule," the children were interested in the Duke's Laws, the division of the country into 'Ridings,' the games played, and the social life. Trees and animals of Long Island, manners, customs, costumes, homes and furniture (of Indians and Whites), came into the study; Irving and Cooper were quoted; rough sketches made; and a Dutch 'trotting' song and a Dutch lullaby (the latter taught me by a Dutch lady, expressly that I might teach the club members) were learned.

A short address on the Civil War (9) and (10), was delivered by Col. Lewis R. Stegman, chairman of the New York Monuments Commission for the Battlefields of Gettysburg, Chattanooga, and Antietam. As he had aided me in preparing the Civil War exhibit in the history collection, the children knew of him and were much gratified to meet and hear a real veteran of the Civil War. He gave a patriotic address, instilling love of country, the duty one owes to the nation of which he is a citizen, and an affectionate respect for the flag. It was well adapted to children for it was filled with stories of the young boys who served in the war and of the work of the women and girls, whose brave letters nerved the men for the field. Col. Stegman offered to come again saying, "I am glad to help. It is splendid work for the United States that you are all doing at this museum. It is a fine thing to train the youngsters in patriotism through proper teaching of history." I feel that we were much honored in the visit of this distinguished man.

In addition to the regular meetings there was one excursion to the museum and library of the Long Island Historical Society. The librarians saved time for us by making previous choice of things to be seen. The children quickly picked out the geological specimens, recognizing them from those they had seen at the Children's Museum. When they saw the Indian tools and utensils, of which the Children's Museum has a carefully chosen few, one boy exclaimed, "Gee! There must have been thousands of Indians on this island. I never thought of there having been so many." Long Island fauna, pictures of the harbor and of individuals, prints and drawings of old local scenes, and the Wilson Peale miniature of Washington attracted them. After showing the things, the librarians and I stood aside to see what the children would choose. Albert Peterson and Sidney Flamm went at once to a large volume of Hugo De Vries' work on plants, having noted the name in passing and connected it with the noble Dutchman of whom we had studied. Margaret Ruff, Edith Lipitz, and Frieda

Schracker went to the case containing the miniature, the seal of Brooklyn, and a few personal articles. The others looked at the pictures. There are choice things we did not see, but we have a cordial invitation to return. The librarians said they had had children there who were a great nuisance, but it was a pleasure to have well-mannered young folks about.

We had an excursion to the old house at Crooke's Mills. This was built before 1643 by an old Dutch sea captain named Schenck. This and the Bergen House, standing near, are the oldest houses in good repair in Brooklyn. They were types copied for a history exhibit. Captain Schenck beached his yacht where he found a good location for a tidewater mill, knocked the boat apart, and used the ship's knees for the framework of the house, which he covered with the boards of the boat, finishing the interior later with native wood.

OBSERVATIONS ABOUT THE CHILDREN

The heading of the tentative outline appealed to the principal of the school from which the children were taken. He said: "The presenting of cumulative evidence in favor of good manners and real friendliness in the individual is exactly what this school stands for. Everywhere we have wall cards inculcating it. It means an immense amount for a child to be taught that."

While conference class work was planned, the children decided to call the group a club "because 'a club' sounds so much more as if you were interested," they said. This they have been and are. They arrive sometimes before the hour and are in no haste to get away. I have to send them home. But that peculiarity seems to belong to most of the children who come to the Children's Museum. Very dramatic incidents I gave first in story form. The children took notes, often asking that the story be dictated, so they could look at the words and remember just how I said them should they wish to read the tale aloud. The parents are in close touch with the work.

PRESENT EVENTS

History in the making rouses the children's attention. The newspaper story of the landing at Vera Cruz of the mountain artillery regiment attracted them because the history exhibit of "Indian Warfare," shows such a regiment starting for action, the mountain cannon with its carriage in sections being packed upon the back of one mule, another following with the boxes of ammunition. I told them that the United States had two such regiments, one being in the Philippines. We spent a good part of one afternoon in studying this exhibit and getting additional information about it. A picture in the *New York Times* showing the ropes lowered on the deck edge of a battleship to allow the cannon full sweep, was contrasted with the exhibit of "Perry and the Battle of Lake Erie," which shows the fixed bulwark with its opening for the muzzle of the cannon, the whole heavy 'short 32' having to be moved for any great change in aim. Another cross-reference to the present came up when studying Brooklyn under the Dutch rule. The feudal law then in operation said that Brooklyn had no right of jurisdiction and could not send delegates to the important convention of November 26, 1863. The creation of a court of record, however, permitted representation. Under the feudal law it was the fief, whether manor or town, that was entitled to be represented, and not the people. The word 'jurisdiction,' led to a discussion of de facto and de jure government in Mexico, of which the newspapers had spoken that morning. I would not wish to come to the meeting unless I had thoroughly read the morning paper. The children made good use of the dictionary, though they would say, "It's easier if you will tell us."

SUMMARY

The above shows that the detail mentioned under material, psychic and social life which the sub-committee desired to have the children acquainted with, has been presented and accepted to as great a degree as has been possible in the short time. While I have guided the children in presenting the subject, my endeavor has been to make them think for themselves, to realize that history, however remote, may be interpreted through the life of the children themselves, or the life which is passing about them; also, the effect on the present of that which history records. Of course, it was necessary to present this in elementary form because the club members are so young. Yet a few of them know how to use their minds, once a direction is suggested. Some of the facts will be deeply impressed, I am sure, because the children are planning to show in semi-pageant form at their school, the dramatic events in what they have learned. They say they wish they could continue the study in the fall. I mention this with interest, because I was told that history would not hold children outside of school hours, when they were not obliged to come and when there were no lantern slides nor 'movies' to attract them. That they have attended regularly in spite of the fact that the meetings have had to be held in the laboratory of the museum, where there is a very warm fire in the range, restricted space, and no blackboard, all drawing having to be done on slips of paper, speaks well, I think, for the hold of history on the child's mind.

Miss Delia I. Griffin, director of the Children's Museum of Boston, presented the following paper:

A MUSEUM EXPERIMENT

"Since time began, children have been asking questions." This statement prefaced an advertisement of a Book of Knowledge which was supposed to answer every query of the young person from, "Why is the sea salt?" to "How do you pronounce the name of the dictator of Mexico?"

The ideal children's museum should somewhat resemble this well-advertised volume and the measure of its success is determined in a large degree by the extent to which it is able to answer the child's varied questions by exhibition, labeling, lectures, and best of all by giving him a chance to work out for himself the problems of life which have also been the problems of the race. This paper will present briefly the manner in which one museum has given its young visitors such an opportunity.

And first a word in regard to the institution. At the Association meeting last year the establishment of the Children's Museum of Boston was announced, and in view of the fact that at the same meeting the question of the promotion of museums was discussed, it may be pertinent to mention how this latest member of the fraternity came into being.

Museums have been founded in many ways. Some were established by groups of scientists who gathered their collections in one place and gave them in charge of a curator whose chief duty was to see that visitors did not approach the exhibits too closely. This was years ago, of course! Other museums have been formed by men of wealth who had a desire to provide healthy amusement and interest for the people of their native towns. And those of the third class have been natural outgrowths of municipal expansion and of the mass of material gathered at world's fairs.

But, so far as the speaker's knowledge goes, only one museum has ever been founded by a body of teachers, and established as the direct result of the need felt by the educators of a large city, for some adequate assistance in the teaching of elementary science.

It was a May evening in 1912 when a dozen Boston teachers met at the home of one of their number and, with the assistance of a lawyer friend, incorporated as the Science Teachers' Bureau, their avowed purpose being "to promote love of Nature and interest in Science and in pursuit of these objects to establish, direct and maintain a public museum in the city of Boston." Considering the salaries accorded teachers, this enterprise was a sufficiently daring project!

One year later, a couple of cases filled with birds and minerals had been secured and placed in a park library, nature walks were being conducted, and a director had been chosen.

Today the institution is housed in Pine Bank, a city building whose use is given to the trustees. The location is ideal, in the midst of a beautiful park on the shore of Jamaica Pond, and within five minutes walk of several car lines. The opportunities for study of trees, birds, plants, and geological formations are almost unlimited, and, save in the severe winter weather, the real museum will be out-of-doors almost as much as within brick walls. Through the generosity of neighboring museums and of individuals the natural history collections increased rapidly and, since the school authorities were broad-minded, both teachers and pupils have ample opportunity to study these exhibits in school hours as well as on Saturdays. In seven months 270 class lectures and lessons have been given—and this is only a beginning. Lectures and nature walks, and even docent service for visitors are not new features of museum activity, though they have impressed hundreds of young people of greater Boston as they did the small boy who visited us recently. Again and again he came to the office seeking for more information than the labels supplied, and finally he drew a long sigh and said, "Ain't there a lot of things in the world to learn about?"

Our museum experiment, carried on under the auspices of the Woman's Education Association, was really started by the loan of a fine Philippine collection. This exhibit was made for a member of the Association, who was desirous that it should serve a two-fold purpose: first, that it should bring about a truer understanding of the Philippine people; and second, that it should be used as a practical illustration of primitive life in a study of the history of civilization.

The articles had been carefully selected by an expert in ethnology and were arranged in such a manner as to indicate the growth in civilization from the work of the wild tribes to the fine handicraft of the people who had been under Spanish rule.

American influence was shown by pictures of roads, bridges, schools, prisons, and hospitals which demonstrated the application of the science of the twentieth century to the problems of transportation, the development of education, and the control of disease.

The children listened with intense interest to stories of Philippine life and the director devoured Dean Worcester's books with her lunch in order to satisfy their demands. Especially were they eager to know the 'how' of things: "How did the Filipinos produce fire with bamboo sticks? How did they poison their arrows? How did they weave the blankets and baskets?"

As a result of the attempt to answer these questions, a course was arranged, which carried out the purpose of the collector and greatly interested the young people. The life of primitive man was studied, boys and girls placing themselves in the shoes of their ancestors and being confronted by some of the problems which these early people met. A club was formed, fifteen children of eighth grade, who met at the museum Saturday mornings and for an hour lived as far as possible the life of long ago. They decided at the outset that the experiences of the cave man were somewhat like those they might suffer if shipwrecked on an uninhabited island and that of the three greatest material needs, food, clothing, and shelter, the former was the most essential. So 'food' became the subject of our study. It required few words to enable the children to realize that from these material wants and from endeavors to satisfy them, has grown the industrial world of today and, to a large extent, the artistic world as well.

It was impossible to consider long the food of primitive man without touching the discovery of fire, and in this connection the club members had as nearly as possible the experiences of their ancestors. Their determination to produce a blaze by means of the Philippine fire sticks was strong; they worked manfully, but their best efforts resulted in smoke only. Then one boy voiced the sentiments of the class: "Those old fellows had a hard time of it." Now I'll venture to say that hours of reading histories of civilization would not have bridged the years between the cave man and the boy so effectually as did his own exertions with the bamboo sticks. Of course tinder and flint were used, and Indian methods of fire production were looked up.

Then came the esthetic side and our little German boy recited the tale of Balder, the Sun God, with a very genuine appreciation. The Persian fire worshipers and stories of the religious festivals at the winter and summer solstice came in here. Pictures (obtained in part from the Museum of Fine Arts) added both to the interest and appreciation of these subjects. The question of utensils for holding food was considered and pottery was studied. The club made a trip to the Art Museum and it was surprising to note their vivid interest in the stone and clay dishes of Egypt. When each child was allowed to hold in his hand a small cup made before the days of Moses, and to put his thumb and finger in the prints left by that potter of long ago, the awe on his face showed that a deeper comprehension of the life of the world had come to him.

Then the children tried their own skill at making pottery. As they worked, a mineral lesson with feldspar for its subject, came in, and later some mention of famous potteries and methods of modern manufacture. But principally we were concerned with potter's wheels and the Indian method of coiling the clay and then molding it into shape and sun-drying it. An artist gave the club two lessons and so interested were the members that several worked the day long, Saturday after Saturday, stopping only for luncheon. They had all sorts of experiences. Some of the best dishes cracked during firing, but this was just the difficulty their ancestors had. One boy developed quite a bit of artistic talent and modeled an Indian's head and a steamboat, and then made a plaster cast of the latter.

A second visit to the Art Museum enabled the class to study the Japanese pottery. After two hours spent with guide books and docent, several children delighted the heart of the latter by requesting tickets, so that they might come in again, they said, "and really study the pottery."

With a few weeks only for the work, the club necessarily passed rapidly from one period to another, a most enjoyable morning being spent on Roman foods, table customs, and manners. Pictures of wine jars and lamps were placed about the room. The children copied these designs or worked out their own, and the friend whose suggestions had been the foundation of this study, described a house of Pompeii, recently visited. Not the least interesting was the day devoted to colonial times and fireplace cooking, brick ovens, and Indian maize.

Finally, the club considered modern methods of raising, preparing, and transporting food; refrigerating plants and fireless cookers; and the great industries which have grown out of man's need for nourishment. Lists of names are not essentially stimulating reading, but when the Scotch, Irish, Norwegian, and French children in this club drew up lists of foods peculiar to their nationalities and enumerated dishes which had never before come within knowledge of the director and which are not usually found on menu cards, the matter grew interesting. Their knowledge of geography was requisitioned for stating from which country strange foods were obtained, and nature study was called upon to indicate the parts of plants which were eaten.

It has been an experiment this year, and we have learned 'how not to do' several features in connection with it. But we have discovered that history may be taught by other methods than that of committing to memory dates of battles, and that young people gain a truer and more comprehensive conception of the problems and development of the race, by the dramatic method of putting themselves in the other man's place.

So the experiment will be continued in the autumn, when 'clothing' and 'housing' will be studied. The former topic affords a fascinating opportunity for following the growth of nations through their industrial development, and the course may range from the purple and fine linen of the Israelites, by way of Penelope's web and Navajo blankets to Whitney's cotton gin, and through it all there is an infinite variety of handicraft for the boys and girls to work at.

As an outgrowth of this study industrial collections are built up, and eventually we may have a miniature commercial museum which will serve nature study and geography teachers to a large degree. The ethnological exhibits of their own and other institutions will have a wealth of meaning for the young people who have studied the history of civilization by dramatizing it, and living through experiences similar to those of their forebears.

Finally, it may be pertinent to inquire why this study should have a place in the museum rather than in the school. Principally because, as Dr. John Dewey says, "The school is not the place where the child lives." He might have added that the right children's museum *is* exactly the place where young people live to the fullest extent and that they turn to it in many instances with more confidence than to home, school, or church for assistance in pursuing hobbies, and for sympathetic guidance in all problems which go to make up their world. That the children themselves have this conception of it was indicated by one Boston boy this winter. He came to Pine Bank so frequently and so soon after school, that we questioned, "How long does it take you to walk from your home over here?" "O, I don't walk," he answered, "I run all the way!"

The discussion of the three preceding papers on the use of museum objects for instruction in the history of civilization was opened by Miss Anna D. Slocum of Jamaica Plain, who originated the idea and planned the scope of the experiments on which these papers are based.

Miss Slocum.—"An experiment in museum work for children was developed at the Worcester Art Museum simultaneously with those of which you have just heard. At Mr. Rea's request this brief description of the Worcester experiment was prepared by Miss Sawtelle to be read at this meeting.

"Copies of the following notices were sent to the schools of the city at the beginning and middle of each season and the teachers kindly cooperated by calling them to the children's attention. The notice begins:

> The Story Hour at the museum will be held every Saturday afternoon from October to May. To it all children nine years old and over, and younger children if accompanied by grown-up people, are welcome. The stories are illustrated by lantern pictures; and photographs connected with them are exhibited in the Children's Room, where there are also to be found books, picture-puzzles, and various materials for drawing.
>
> The subject for the year is Architecture, that is, the buildings of different countries and periods, together with something of the life of the people who made them, beginning with the days before men built houses for themselves and coming down to the buildings we see about us now.

"The first story was called: Outdoors and Indoors. The second: The Boy of the Cave. The third: Stonehenge and Mistletoe. Then followed talks on Egypt, Assyria, Greece, Rome, Constantinople, Italy, France, England, and America.

"To quote directly from Miss Sawtelle's report:

> The aim of the work this year was twofold. First, to acquaint the children with the buildings of different countries and periods by presenting them as an expression of the life and circumstances of the people; secondly, to arouse interest in the buildings here in Worcester by showing what their ancestry really was. For these purposes the talks were partly in the form of stories and partly in discussion, in order to hold the attention of the children, who were between nine and

thirteen years of age. Sometimes as in the case of Egypt and Greece, the first of the groups of talks on a given country would be entirely devoted to a story of the life of the people. For example, for Egypt the story was of the life on an Egyptian nobleman's large estate in the time of Rameses II. This was followed the next week by a description of an imaginary trip up the Nile at the same period of a little Egyptian boy, on his father's merchant ship. This gave a chance to follow conveniently the chronological order of the architecture, beginning with the Gizeh pyramids, passing the Beni Hasan tombs, and ending with a visit to the great temple at Karnak, where its general decoration and arrangement, the relation of its column forms to the flowers of the Nile, and the elements of post and lintel construction were explained. The fact was noted that the predominant religious interest of the Egyptians explained their great emphasis on temple building. All this, of course, was done in the simplest possible words, with almost no technical terms. All the points emphasized were illustrated by lantern slides.

Sometimes, as in the case of "A Crusader and his Castle," no preliminary story was told, but the architecture was woven in with the narrative itself (in that particular instance the legend of one of the lords of the Castle of Coucy was used). Occasionally there was no story element at all, but instead by describing the climate, habits, and interests of the people, available building materials, etc., the children were given the determining factors in the architecture, and then by questioning were led to discover for themselves the necessary characteristics of the buildings. For instance, in discussing Assyria, where clay rather than stone was abundant, the children themselves suggested the use of bricks, and when asked how roofing could be managed with such small units, one boy volunteered the idea and explanation of the arch principle, having seen a friend's building blocks with which arches could be constructed.

On one occasion we were fortunate in having Mr. Herbert W. Faulkner, who brought his fascinating model of a Gothic cathedral with its piers, ribs, and flying buttresses, which he erected piece by piece before the audience. More than two months later, when questioned, the children could give a really clear explanation of the purpose of a flying buttress.

The story and discussion usually centered about some one example of the architecture of the given period, in order that the children might connect the principles with some definite building; and at the end of each talk, when possible, we asked for or mentioned examples of Worcester architecture similar to what had just been discussed. At the final talk for the year, slides were shown representing various local buildings which illustrated typical periods.

In the Children's Room, the talks have been supplemented by exhibitions of photographs, often duplicating pictures shown in the slides; and by architectural puzzles—that is, picture puzzles made from photographs of buildings which have been mounted, colored, and then cut as far as possible along the structural lines of the architecture.

Of course we realize that in all this the harvest may not have been abundant. The attendance at the talks is entirely voluntary, so that although we have a good number of constant comers, many of the children who only drop in from time to time can gain no very consecutive ideas of architectural development. Still, with a total attendance of 1526, many have been reached and there have been various little rewarding incidents. One boy was met on the street one day, gazing raptly at the church opposite, and he eagerly stopped us to show us the gargoyles and buttresses which he had discovered. Two little children, only seven and eight respectively, asked their Sunday-school teacher to take them oven their church to see if they could find "some posts with caps [capitals] like the ones in the stories." After all, if only we have made the children look at and take an interest in the buildings of their city and possibly connect them, even vaguely, with the people of other lands and other times, the work has been well worth doing. Indeed, we are eager to try it again in some future year; and if we do, we hope to procure really good building blocks, and a model for each period similar to Mr. Faulkner's Gothic one.

"At a committee meeting a short time ago President-emeritus Eliot of Harvard University spoke of the desirability of discarding text books. A few days later at a dinner I sat next to a professor from California. He, too, spoke slightingly of the text book. So this view, disparaging what has been until lately universally used by the educational world, came to me within a few days from the Atlantic and from the Pacific.

"What have we to take the place of the text book? Museums, of course, museums of science and museums of art.

"Here is a recent book by Professor James Harvey Robinson, of Columbia University, called 'The New History, Essays illustrating the Modern Historical Outlook,' which lays less emphasis on wars, kings, and parliaments, and more on the revolutionary changes that are being brought about through inventions and industrial developments.

"It is not wars, kings, and parliaments, but these inventions and industrial developments that are responsible for the present mingling of many races and varying stages of civilization, and for the great industrial and national problems of our day.

"The question how to help our people to understand more clearly these present conditions may be answered in part by teaching this new history through the laboratory method with actual objects in museums of science and of fine arts, whose collections illustrate the development of civilization by the nations of the past and the present in the different countries of the world.

"We ask for your criticisms and suggestions."

Secretary Rea.—"Mr. President, on behalf of the Secretary's office, and I feel sure also on behalf of all the members here, I wish to thank Miss Slocum for the very delightful and instructive feature of our program which she has prepared. I think it ought to be fully appreciated by the members that this whole topic, both the origination of the idea and the stimulation of the experiments of these various institutions, is due to Miss Slocum, who has so modestly remained in the background. I think we have never had three papers treating more directly and in more clear-cut fashion or in a more convincing way with any subject than those which have just been read."

President Gilman.—"This is a subject of very deep interest. A text book generally contains illustrations as well as text. Now, one step further may be taken, and that is to illustrate with real things that can be looked at from all sides and even handled. In the case of a coin and similar realities, we may have the real thing instead of pictured representations. We know how poverty stricken the text books of forty years ago were in the matter of illustrations. Now we simply revel in illustrations. The next step is to revel as far as possible in collections of actual objects.

"The French writer Coppée was not a museum man, but I remember a paragraph on the use of museums in one of his essays. He had found out after long experience how to use museums. He said that after looking at the old swords, breastplates, and embroideries in the Cluny Museum, he was fired with enthusiasm to know something about the exhibits, and he used to read histories and find them vivified by what he had seen in the museum, while what he had seen was rendered interesting by the reading of the history.

"This makes me think that the teaching of history is much more valuable if it can be coupled with the actual observation of objects."

Miss Gallup.—"Mr. President, it is a serious question how we can put this plan into effect to any great extent in a large city. A procession of the school children in the borough of Brooklyn probably could not even walk through the Children's Museum in a day or a week. How then are we to get objects into the hands of the children? Does it not mean that we must take the material to the children in their local centers, and there give them an opportunity to see it and handle it?"

Treasurer Wilson.—"Mr. President, the papers this afternoon have been to me the most interesting during my experience with the American Association of Museums.

"Mr. Putnam shows that there are dozens of even large cities in the United States that have no museum at all, and of course hundreds of small places have none. This fact brings back to my mind again the importance of the Commission for Museum Cooperation. It has a really remarkable work to do, for if it is properly carried on it will furnish the ignition material in many of these small towns and larger cities for the organization of just such institutions as have been described. To do this needs only a very small amount of well selected material, and that material occurs in some museums in great duplication.

"This whole discussion has been to me a stimulus to do more work, and to put a foundation under this Commission, which we have just outlined in a slight degree.

"Regarding the question which Miss Gallup has asked as to how we can stimulate the work and get at the mass of children, I have an illustration in Philadelphia which I feel would be proper to give at this time. The Commercial Museum began ten years or more ago to try to reach the children in Philadelphia. It first prepared a collection of about four hundred objects and one hundred photographs to illustrate basic materials in commerce. These things were packed in a big box in such a way that any teacher could repack them. This box was sent out as an experiment to one of the schools. The intention was to leave it there ten days and then have the wagon take it on to the next school. We had arranged a series of schools to which it should go, but when we called for the collection the school did not want to let it go, and we very soon found that we could not take these collections away after ten days without ill feeling. We decided that the plan was not practical and gave it up after a few exhibits had been prepared.

"Later we prepared collections which we put into the schools and left there permanently. We were so poor in the beginning that we solicited gifts of manufacturing materials from various firms in order to make these exhibits. Finally, we got an appropriation from the state to do this work. This past year we had an appropriation of $30,000 for nothing else than to put these collections in the schools throughout the state during the next two years. We give them to the schools with all necessary information and instructions. Many of them go into the little country districts, where the schools are not graded at all; in fact, we try to get them into those schools in preference to any others.

"The work has gone along in this way until we estimate that we are reaching about 75,000 children in the state each year in one way or another. In addition to these collections, we have another systematic work which consists in sending lectures with lantern slides and lanterns to the different schools. This work is patterned after that of a gentleman in New York, who years ago inaugurated the system of sending lectures and slides all through the state of New York, although he did not send lanterns, simply sending the slides with the written lectures.

"We went a step further. We procured lanterns that in the first instance were run with kerosene, because they went into little remote schools where the teacher probably had never seen a lantern. Everyone is used to handling kerosene lamps, and we knew that the teacher would know how to trim a lantern which burned kerosene oil. Later we found that electricity had so developed that there were electric plants in some small towns of only three or four or five hundred people, so we added both incandescent and arc lanterns. Today we are using for the remote schools acetylene lights, which come with the compressed gas in a little tank that is so simple that a child could handle it. Kerosene has been done away with. At present we are circulating continually fifteen lanterns and thirty cases, keeping two or three people busy in taking care of them.

"In addition to writing new lectures on all kinds of subjects, we so adjust this matter that some person who is a little ahead of the others in a given township will arrange that one lantern will go into five or eight or sometimes ten schools, and yet be back to us in fifteen days. We are also letting the churches have these lanterns. I have had them go to a remote part of Pennsylvania and be back in eleven days, after being used seven times, so they are going back and forth all the time.

"The real point that I want to make about this work is that hitherto we have been absolutely unconnected with the school system in Philadelphia. Last January, however, I received a communication from the superintendent of schools, sending me a report of the committee appointed by the district superintendents in the city of Philadelphia to examine into our work and report back to the superintendent of schools. That committee had been to our place, studied what it wished to study, and reported to the superintendent, yet I never discovered it had been there at all. The report criticized our work slightly, but praised it in many respects. It said that the work was unavailable to the mass of the schools. That was perfectly true, for during this last winter we refused to provide lectures for sixteen schools in one day, because there was not an hour that we could put another school lecture in for at least four weeks. We had notified each school that we could not give the number of lectures that might be required, and that any teacher who wished to have a lecture on a given subject ought to make a reservation in advance.

"In view of these facts it was suggested that this work might be done in different centers in Philadelphia other than the museum. It was proposed at first that the lectures should be in charge of teachers assigned from the schools. I said that we could not guarantee the success of the work unless we could select the teachers, have the right to keep them a part of the time under our instruction in the Commercial Museum, and have absolute charge of the work. This has been conceded. A room admirably suited to the purpose has been selected in a manufacturing district about eight or ten miles from the Museum. We have agreed to provide a moving picture outfit, lantern, slides, and material to illustrate the lectures and we have procured lecturers entirely under our control. In the end we shall establish eight or ten of these centers in Philadelphia, some of them fifteen miles apart.

"It has seemed to me remarkable that our work should have continued for more than ten years without any official relation with the board of education. It is therefore peculiarly gratifying to have the request for formal affiliation originate with the superintendent of schools."

Secretary Rea.—"Mr. President, I would like to request the authors of these papers to prepare abstracts of their lectures on these subjects and to file these abstracts with the Commission for Museum Co-operation..

"We all know that museum curators have very limited time for the organization of new subjects. Many curators would be very glad to undertake experiments in the teaching of history similar to those which have been described this afternoon but will be deterred by the time necessary to organize the work properly. Such abstracts as I have requested would be of the greatest assistance to curators in this position and would do much to facilitate the spread of the work.

"It might be possible for the Commission to collate material of this kind and to publish it in the form of a bulletin or bulletins which would be sent to persons interested in such work."

Miss Caroline M. McIlvaine (Chicago Historical Society).—"Miss Gallup's statement that the pupils of the schools of Brooklyn could not even walk through the museum in a week brings to my mind a partial solution of this question which has been worked out in the Chicago Historical Society as a result of our limitations in carrying museum material to the schools.

"The most valuable parts of historical collections for purposes of instruction are usually unique things which can never be replaced, and whose interest lies largely in their associations. The risk attendant upon sending such material to schools from which it may or may not come back intact is a serious one. The substitution of photographs of the objects gives something little better than a book.

"To meet these conditions the Chicago Historical Society has arranged to have the pupils of the public schools visit the museum through a system of delegates. This year we addressed our lecture on Chicago history to the eighth grade only, since the study of the history of Chicago comes in this grade. There are 17,800 pupils in the eighth grade of the Chicago schools, and we have distributed each week twenty or thirty delegate tickets, suggesting to the teachers that the delegates either be elected by the class, appointed by the teachers, or awarded under a merit system. This plan has resulted in the attendance of a large number of delegates at our lectures, and they usually arrive an hour or two before the lecture and remain an hour afterwards examining the museum. These delegates see the museum objects in their proper environment and the plan has worked very satisfactorily.

"It means much more to see in its natural surroundings a model of a log cabin built in Chicago in 1879 than to see a picture of this cabin. The environment of the Historical Society itself intensifies the meaning of the individual exhibits. If it had an unlimited collection of duplicates we could probably prepare selected sets for circulation among the schools, but this condition can seldom exist in historical collections, and for this reason we feel that the delegate system is the best solution of the problem at the present time."

Miss Gallup.—"I quite appreciate the difficulty of circulating unique historical objects among the schools, but it was my intention to emphasize the necessity of giving all the children museum experience. If we were to establish local centers or sub-stations of the museum it would be impossible to exhibit choice antiquities that must be kept in fireproof buildings, but it would be possible to assemble enough material to create interest and to give the children experience in observation and in methods of research, so that as they grow older they will naturally seek more authentic sources of information and grow to be men and women who can appreciate public institutions and know how to make use of them. I feel that too much emphasis cannot be laid on this necessity of giving the children actual experience in museums."

Mr. Harlan I. Smith (*Geological Survey of Canada*).—"It has seemed to me for a great many years that the time is surely coming when there will be a museum in every schoolhouse in the land. I really believe that our Association or our Commission for Museum Cooperation will stimulate the establishment of such museums, or assist in placing museum material where teachers and students can get at it."

Mr. Herbert E. Sargent (*Kent Scientific Museum, Grand Rapids*).—"When Mr. Rea was speaking of the desirability of distributing information regarding museum organization and work, it occurred to me that this is a very real reason for desiring our publication in four numbers instead of one. If we could get every three months a quarter of our annual report with suggestions of this kind it would be of more value than in a single volume."

Dr. Oliver C. Farrington (*Field Museum, Chicago*).—"I quite agree with Miss Gallup that the final purpose of circulating exhibits should be to draw children to the museums. If they do this they fulfil their first purpose. I hope when you visit the Field Museum on Thursday you will not fail to see the new series of circulating exhibits now being prepared under the auspices of the N. W. Harris fund."

Mr. J. H. Paarmann (*Davenport Academy of Sciences*).—"The Association may be interested in the experiment recently tried at the Davenport Academy of Sciences. Through the newspapers we offered prizes to the children most successful in identifying birds or in writing compositions on the habits of birds. As a result of the newspaper announcements two children entered the contest. I then distributed to the various schools in the city illustrated circulars telling the children about these contests, with the result that six hundred and fifty answers were turned in during the following week against the two that had come in through the papers. This shows the possibility of arousing interest through the public schools."

Treasurer Wilson.—"Mr. President, I wish to return to the suggestion made by Mr. Rea and say that I want an absolute promise right here from Dr. Lucas and the three ladies who have presented papers on this subject, that they will send to the Secretary syllabi of the courses they are preparing, so that the Commission may consider how they can be used to best advantage. If we had such material coming in from time to time our reports on these subjects would be sought after by hundreds and thousands of teachers throughout the United States."

Dr. Leon D. Peaslee, curator of the department of education of the Public Museum of the City of Milwaukee, presented the following paper:

ORAL EDUCATION AT THE PUBLIC MUSEUM OF THE CITY OF MILWAUKEE

Direct oral teaching was first instituted at the Public Museum of Milwaukee in the years 1887–88 when the then custodian delivered a series of lectures at the museum to the eighth grade classes from the public schools. There was then a suspension of this work until 1900, when the public school board furnished lecturers who instructed three classes a day, covering all the grades from the fifth to the eighth inclusive, during the school year. In 1906 this work was discontinued, but was resumed in 1908 under the auspices of the museum with certain financial aid from the school board. In 1909 the first series of lectures designed for the adult public was given. Since that time various courses have been added until today the program of lectures offers a rather broad field of educational possibilities to both young and old.

In arranging the courses of lectures there are recognized, at present, four classes of individuals who may be benefited by the same, namely: the general adult public; school teachers; students of normal, vocational, and high schools; and grammar school children. To reach all these, the undivided attention of an educational department with a staff consisting of a curator, an associate lecturer, a professional photographer and lantern operator, and an expert slide colorist is necessary.

For the general public four distinct courses are given. The first is a botany course which consists of a series of illustrated lectures extending through the spring and fall months and designed for those who are especially interested in plant life. Meetings are held at 2 p.m. on Saturdays, and, after a talk on some botanical subject, the company adjourns to a neighboring woodland or park to study plant life in its natural environment. To illustrate these lectures at the museum a large series of botanical slides have been made consisting of almost a complete set of the commoner wild flowers of Wisconsin, besides examples of the best known species of the world which may be used in discussing plant habit and structure.

A bird course, which runs through the entire year excepting the summer months, is also given. These lectures are held at 3 p.m. on

Saturdays and at each some phase of bird life is discussed and illustrated. Field trips are made during the spring and fall months.

This course and the preceding one meet with the approval of a large group of people who are nature lovers and appreciate the opportunity to better themselves by the lectures and field trips.

An earth study course has been recently inaugurated and bids fair to be equally as acceptable to the general public as bird or plant study. These lectures are given evenings, and this time seems very satisfactory as it opens the course to many who could not attend during the day.

Special Sunday afternoon and evening lectures are also a phase of the work with the general public. These are planned to be popular discussions of topics of current or general interest, and such subjects as "George Washington," "A Health Program," "Crossing the Andes," "Ruined Cities of Asia Minor," "In Southern Louisiana," "Home and School Gardening," and "Mexico," have been given, either by members of the museum force or by other speakers brought here for the purpose. A very good attendance at these lectures has demonstrated the value of Sunday courses.

The Milwaukee school course of study requires for nature study in the grammar schools, the teaching in each grade of a specific bird, tree, flower, and vegetable. A teacher's course is arranged to offer special aid in this work. It consists of three series of about seven lectures each, dealing with bird study, tree study, and botany. In each series the first lectures treat with general topics, while the last discuss the specific birds, trees, and plants called for in the course of study.

Normal, vocational, and high schools are reached in various ways according to their requirements. Museum lecturers give talks or series of talks at the schools, or give floor lectures or conduct guide parties through the museum upon request. Special lectures are arranged for the School of Trades for Girls, such as; "The Feather Trade," "Fur Industry," etc.

A science club for high school students has been in operation for two years and is a thriving institution. The object of the club is to offer to those students in the high schools who are especially interested in natural science, an opportunity to go more deeply into the subject than is possible in school. Special research tables and microscopes are provided by the museum for those who may wish to take up a problem needing them, but on the whole the club is an outdoor organization. The members assemble each Saturday morning at the museum, and, when the weather permits, go immediately to the woods, where they hold their business meetings and then set about any work which they may have elected to do. During the past year two problems were undertaken. The first, a botanical survey of Johnson's Woods near Milwaukee, required the making of a topographical map, and a close study throughout the year of the flora of the woods in order that the location and time of flowering and fruiting of all might be recorded. This work has been completed. The second problem was the making of a tree map of one of the large parks of the city. Practically all the varieties of trees, both native and introduced, have already been identified and located upon a map which the club expects to present to the park commission when finished. During the worst of the past winter the science club spent its time in making a study of the various industrial plants of interest in the city.

Probably the most far-reaching work of the department is that done with the grammar school children. Although the museum has not found it possible to set aside a branch for children, nor has it been able to arrange its exhibits especially for them, except in the case of loan collections of birds, small mammals, insects, Wisconsin archeology, geology, and commercial products, which are used extensively; nevertheless it has been found possible to adapt the groups to the wants of children in the lectures arranged for them. Regular arrangements are made with the school system whereby all public school children of the fifth, sixth, seventh, and eighth grades come to the museum twice each year for half-day visits. This means from 150 to 250 pupils each school day during the year. The children are first taken to the lecture hall, where they are given an illustrated talk upon some subject closely related to their class work, as follows:

Fifth Grade:
  Transportation.
  Natural resources of Wisconsin.
Sixth Grade:
  Adaptations of man to his surroundings.
  The Indians of North America.
Seventh Grade:
  Insects and birds and their relations to man.
  Physical geography.
Eighth Grade:
  Ecology; the relations of plants and animals to their environments.
  Conservation.

Following the lecture, which is profusely illustrated by colored lantern slides, and a short recess, the classes are conducted through the museum in search of things to illustrate the subject of the lecture just completed. Two methods are used in this guide work. In some cases, having learned the chief points of the lecture with the aid of illustrations from known objects, the children are conducted to specimens related to the subject but entirely unknown to them, and are permitted to test their knowledge of the subject by applying it to these specimens. This method stimulates the powers of observation and clearly shows that the child, when once shown the proper way, can obtain the desired information about a specimen without the use of an extensive label.

The second method used in guide work is to take the children in parties to the rooms where the proper illustrative material may be found and then permit them to scatter and search for it unassisted, except for what help they may derive from their teachers or the guides about the rooms. After a sufficient time they are assembled and given a short quiz in the form of a résumé of the subject of the day's lecture, illustrated by what they have found.

Although at first thought it may seem that the children might not get as much out of this method as when under supervision the entire time, experience has shown this is not so. Then too, in this way, the children are permitted at the same time to see other things in which they are interested, and since in many cases they are not able to visit the museum except at these times, they should not be refused the privilege.

Extra lectures for children which are given outside of school hours have also been tried and found quite successful. Such talks as "George Washington," "Stories from Bird Life," "Home and School Gardening," "Coast Protection," etc. have been well attended, the largest number at any given lecture being 1700.

The following is a summary of the report of the department of education of the Public Museum of Milwaukee for the year extending from July 1, 1913 to July 1, 1914.

Instruction given:	*No. of Lectures*	*Attendance*
Grammar school lectures		
At the museum		
Illustrated	183	59,252
Guide talks	182	
Special lectures	8	2,808
Special guide talks	4	112
At the schools	6	2,140

Instruction given:	*No. of Lectures*	*Attendance*
Vocational and high schools		
Special lectures	13	1,174
Guide lectures	8	278
Science Club	36	524
Teachers' lecture courses		
Bird, tree, and plant study	15	637
Lectures for general public		
At the museum		
Bird course	20	1,048
Botany course	15	690
Geology course	7	747
Special Sunday and evening lectures	8	3,290
Field trips	18	573
Outside lectures	14	3,849
Miscellaneous guide talks	2	54
Total hours of instruction	539	
Total attendance		77,176
Lantern slides:		
New slides made		
Colored		1,320
Uncolored		262
Total slides in collection		6,520
Slides repaired		70
Slides loaned		667

The afternoon session then adjourned.

SESSION OF TUESDAY, MAY 19

Evening

The evening session was called to order at 8 o'clock in the Milwaukee Public Museum. Before delivering the presidential address President Gilman spoke as follows:

President Gilman.—"Ladies and Gentlemen: What I have to say is both an inaugural and a valedictory. Tomorrow morning you will elect another president, therefore this is a valedictory, and since a president's address has never yet been given at any of our meetings, it is also an inaugural. The practice seemed to me, as soon as it was suggested, a very good one. I suppose the underlying idea of a president's address is that someone ought to take a bird's eye view occasionally and let us hear what the results are. I have something that I want to say very much indeed. It does not only concern us, but it concerns all our class, whom I might group together as experts, and the title that I have chosen for my talk is: "The Day of the Expert."

The following presidential address was then delivered by President Benjamin Ives Gilman, secretary of the Museum of Fine Arts in Boston:

THE DAY OF THE EXPERT

The papers read before the American Association of Museums during the eight years of its life have covered a wide range of topics, reaching, one might imagine, the whole circle of museum interests. Yet there is one question, antecedent to all others, which has never been asked, and but once approached, in your presence. I recall with pleasure that the speaker who approached it was our present host and my immediate predecessor in the office of president. This is the question: Just what use are all these papers? We meet to develop and exchange our ideas; but when we separate, what power have we to put into effect what we have concluded and learned? We have the voice here. How much voice have we at home?

This question of official scope we share with every similar association; and with several it has recently become a burning question. Just a year ago there was formed an association of university professors for the determination and maintenance of professorial rights; and last winter the American Political Science Association, and the Philosophical and Psychological associations appointed committees to consider and report upon like matters.

A problem of problems like this offers appropriate matter for an initial presidential address; and its simultaneous agitation elsewhere suggests treating it in the broadest possible way—as a concern, not of one profession, but of all professions. Thus amplified, the topic becomes that of the present and future status of the specialist in the United States. Far as this theme stretches beyond the work of the permanent public exhibitions we call museums, the inquiry into the day of the expert is one that vitally touches the whole official activity of every museum worker.

The inquiry naturally divides itself into four: What has been the position of the expert among us? What change suggests itself? What are the bearings of change? What are the prospects of change?

We shall offer replies to these questions in succession: (1) by arguing that the prevailing attitude of institutions of the humanities in this country toward their expert employees is out of date; (2) by specifying a reform that would bring it up to date; (3) by meeting criticisms of the new order; and (4) by noting its approach. We shall describe an outgrown condition, state and defend an adjustment, and report progress toward it. A glimpse of the past will lead to a glimpse of the future.

By expert will here be meant a person whose achievements demand special aptitudes long exercised; and by his day a time when these developed abilities are used to the best advantage of the community.

For the expert in this country, today, according to frequent remark, is not such a time; but there are signs that tomorrow will be.

Here and now, the work of the expert is largely carried on as a branch of corporate activity. Our men of science, pure and applied, our lawyers, doctors, educators, clergymen, social workers, artists and students of art, while they may practise their specialties alone, very commonly also serve some corporation, and in great numbers serve a corporation exclusively, as do most of us assembled here.

A corporation is a body of men empowered by the state to join in a certain purpose, and held responsible for its due fulfilment. At the end of his brief and hampered career as premier of England, Lord Rosebery is reported to have said: "Responsibility without power is hell." To be discharged successfully, duty must be coupled with corresponding authority. This is the foundation principle with which any study of the corporate sphere of the expert must begin. A corporation engaging the aid of a staff is responsible at once for every detail of their action in its service, and for every detail of their outside life, in so far as this reacts upon their official activity; and hence possesses equivalent rights of control, subject only to law and custom.

Rights of total control presuppose in turn competence for total control. To ensure it, two methods of selecting the membership of a corporation are possible. In giving a certain purpose into the sole charge of certain persons, regard may be had either to the purpose chiefly, or to the persons chiefly; to their special competence, or to their general competence.

In the history of this country, the choice among men of the professions concerned was a colonial method; that among men of ability, however displayed, has been our national method.

The colonial method was an inheritance from the old world. Leonardo da Vinci is spoken of as the last European to take all knowledge for his province. With the development of the sciences and the arts after him, even men of commanding powers became specialists. Following the example of the mother country, the colonies placed their first colleges under the control of educational experts—in the main their clerics par excellence, or clergymen. An interpretation of the charter of Harvard College of 1636 given later by the colonial legislature, affirmed that the corporation was restricted to members of the teaching force; as the corporations of Oxford and Cambridge in England still are. The charter of Yale College was issued in 1701 to ten clergymen, and provided that their successors should always be clergymen.

At the birth of our nation, the emphasis turned from purposes to persons, under the compelling force of two causes; the parity of our voting citizens and the conditions of a new national life.

From the beginning of the new union one man was as good as another at the polls. Every vote cast was given the same weight. It followed that the recognition of the likenesses of men became dominant, and the recognition of their differences obscured. Leading men came to be thought of as like exponents of the sense and efficiency of the community. The acknowledgment of competence took the form of an acknowledgment of general competence. We of the United States have been nurtured in the belief that a man who has distinguished himself in any one direction will also distinguish himself in any other.

Our early national experience confirmed the belief at every turn. Pioneer conditions bring out the all-round man. The solid citizen in a new community is called on to be at once a farmer for sustenance, a manufacturer for clothing, a builder for shelter, and a soldier for defence; often also a lawyer for justice, a doctor for the body, an educator for the mind, or a teacher for the soul. The nascent civilization of the United States had its Leonardo da Vinci in Benjamin Franklin. Nor has our later progress yet thoroughly dislodged the ideal of the all-round American, fit for any task. The subjugation of a continent is in the main a business matter, and an able man may learn a business in all its branches. The practice of naming any capable person for any office has maintained itself among us because surpassing excellence has not for the most part been essential. We have fought successful wars with citizen soldiery and grown great in peace with practical men as intellectual guides. To Amiel our democracy announced an era of mediocrity; Schopenhauer called us a nation of plebeians; an Austrian royal visitor missed among us the sense of personality—the perception of that delicate but real differentiation that makes each man himself and no other. This is the mark left on the society of the United States by our day of small things.

That day is now past; and it behooves us to examine the foundations of the emphasis which our methods of assigning responsibility impose upon persons instead of upon purposes, upon general repute instead of special fitness. When examined, our course proves an aberration from that of colonial times learned in Europe. We must go back upon history; but only to go on to a new social ideal which shall square at once with our political creed and our existing national conditions.

First, as to our political creed. The parity of voters obscures, but also implies the difference of men's capacity. In affirming that persons of a certain sex and reaching certain mental, moral, and economical standards should be counted alike in the process of government, it presupposes others who do not possess these qualifications and are not to be counted at all. The conception of the equal distribution of capacity among men is negatived by the political device itself which fostered it.

It may be asked: What then becomes of the belief that men are created equal? If that renowned assertion does not mean that one man is as good as another, that all persons would show like capacity with like opportunity, what does it mean? Something totally different. Did it claim that every babe new-born might under favorable circumstances become what any other may, it would seek to persuade us that males might become mothers. Instead of this and other absurdities but little less glaring, it proclaims the logical postulate that all real differences of human capacity are sensible facts of the present world. In Jefferson's glowing words, the inhabitants of this created frame bring none of their disparities with them from the invisible. There are no such things as divine rights, withdrawn from human scrutiny. The doctrine of equality affirms that only those persons who show themselves different should be treated differently. Its motto is the Roman challenge "*Aut tace, aut face*"—in modern American "Put up or shut up." True democracy is scientific method applied in politics. It accepts as inevitable in the political sphere also what Huxley called the great tragedy of science, "the slaughter of a beautiful theory by an ugly fact." The belief that a man who has shown exceptional powers in any one direction will also show them in any other is such a beautiful theory, exposed by our political creed to slaughter by ugly facts. Within narrow limits they confirm it. A capable farmer or efficient selectman will in all probability prove a good teacher of the rule of three, or a good postmaster. Beyond narrow limits they disprove it. Probably neither could teach Abelian functions well, or manage a wireless station. But whether verified or falsified, it is not the generalization itself, but the test of it, which is the sum and substance of the principle of equality. This is a doctrine of method, not a statement of results. It repeats in modern words the ancient injunction: "By their fruits ye shall know them." It is the merit system generalized. Admitting all verifiable disparities of human capacity, and excluding all mystic disparities, the equality of the Declaration is simple common sense. Denying them all indiscriminately, the equality of its interpretation is literally nonsense.

Second, as to our national conditions. They are no longer those of pioneer life. The task of leading the civilization of the United States has ceased to resemble a business. No man, however able, can learn it in all its branches. Growth, as is its wont, has developed heterogeneity from homogeneity. The arts we now practise have become as long as the lives we can devote to them. Our farmers, our manufacturers, our builders, our soldiers, our lawyers, our doctors, our educators, our religious leaders, are now different persons, each given wholly to his work. The era of the all-round man has at last gone by for us also, as centuries ago it went by for the old world. The excellence that comes alone from the long exercise of special aptitude is everywhere demanded, and the demand is everywhere being met. The era of mediocrity, the nation of plebeians, is on its way to bringing forth aristocracies of demonstrated ability, and the sense of personality, the recognition of that delicate but real differentiation that makes each man himself and no other, will not long delay its advent.

The democracy of individuality, the democracy that accepts all proven differences and no other, is the new social ideal, squaring at once with the creed of our fathers and our own conditions. With our political creed, for the doctrine of equality, in denying all supersensible differences, stops short at the sensible world. Personality is its presupposition. With our national conditions, for the all-round man is bested in every line by the exceptional man in that line, and only the best has become good enough for us The Jack-of-all-trades is master of none, and our progress calls for masters everywhere. Finally, the democracy of individuality makes for the union in which there is strength. The new ideal is not that of a society of persons increasingly like each other, and hence increasingly sufficient each to himself, but of persons increasingly different each from the other, and hence increasingly necessary each to the other. While the Declaration proclaimed our independence of other peoples, it assumed our interdependence among ourselves. A citizenship of similars is like the sand, composed of particles each as complete as any and with no tendency to cohere; and a political house built upon it will fall. A citizenship of dissimilars is like the rock composed of particles supplementing and cleaving to each other; and a political house built upon it will stand.

But we have not yet acquired the courage of our fundamental political conviction, nor yet thoroughly adjusted ourselves to our larger life. The administration of collective enterprises in the United States is at present in a state of unstable equilibrium. The question of the corporate sphere of the expert is not yet settled because not yet settled right.

While the actual fulfilment of corporate purposes has in general grown beyond the competence of any but those of special aptitude long exercised, our national habit persists of placing these purposes in charge of men of ability however displayed. Any conspicuous success, especially financial success, opens the way to a position of corporate authority. The necessary result is a permissive system of control. A corporation among us executes its trust by choosing paid assistants of the special ability required, and permitting them to carry out its purposes more or less in their own way. This situation of power perforce in abeyance is one of unstable administrative equilibrium. What is permitted can also be forbidden, and may at any time be forbidden by an authority alive to its responsibility and conscious of its power. In this event two rights to control come into conflict: the right based on capacity and the right based on law. The uncertainty of the situation is plain in the case of institutions of the humanities. Only an Orientalist can determine what antecedent study should be demanded for a course in the Vedas, only a technician whether quaternions should be used in teaching engineering, only an experimenter when a culture should be transferred from sun to shade, only a librarian what system of shelf numbering is applicable to fiction, only a surgeon how to conduct an operation in tracheotomy, only a religious leader to what spiritual exercise to invite a soul in need, only a curator how to install an ecological exhibit or make a collection of prints tell on the public, only an alienist how to control *melancholia agitans*, only a social worker how far the same methods of help are fitted to Syrians and Chinese. Yet others make up the boards on whose responsibility, by whose authority, and at whose option such decisions are taken. The permissive system settles the question of the corporate sphere of the expert but temporarily; leaving competence subject to impotence. It presents a problem, and one only to be solved by the union of the two potentially opposing rights. In the end, capacity must be given a legal standing. The skill demanded of the employee must be represented among the employers.

In contrast with the permissive system of control, that exercised according to this conclusion by a mixed board may be called the positive system. The terms refer respectively to the power of veto and the power of fiat. The positive system proposes that a corporation shall be constituted with a competence as all-embracing as its authority. Concretely and considering charitable foundations only, it proposes that professors in our colleges and technical schools shall be represented among the trustees of those institutions, librarians and heads of departments among those of libraries, scientific men among those of institutions of research, physicians among those of hospitals, clergymen among those of religious establishments, directors and curators among those of museums, social workers among those of foundations for popular betterment. In the most general terms it claims that any corporation should include members embodying in their own persons the special types of skill essential in carrying on its work. This claim is based on the conditions of permanent efficiency in collective enterprises. Its recognition is growing among us and will one day be general. That day will be the day of the expert.

Such a change in the make-up of corporations in this country may be said to round out an organization which practical sagacity has already partially developed in foundations of private origin and public aim among us. The men of general repute which it has been our custom to choose for positions of charitable trust have acquired by the logic of events their special necessary function in the fulfilment of these trusts. This function is that of winning support for the institutions they control. In our own country more than in any other, corporations not for profit are the fruit of private initiative. The first requisite for their establishment and maintenance is the selection of a board of trustees whose names, with those of their successors, will be an earnest of coming gifts because a guarantee of their safe and conscientious handling. Before we can do anything, we must have something to do with. But although ample and assured support is a condition necessary to the success of an institution, it is not a condition sufficient to success. A function equally necessary, and with support sufficient, is that of the accomplishment of purpose. This is the second and no less exacting half of the task; with us overshadowed by the first, because the accumulation of our wealth has outrun our provision of knowledge and skill to utilize it. The positive system of control repairs this omission, now out of date. It supplements our present provision of means by providing also for ends. It would impose the total charge of an institution upon a body fitted to bear both halves of it. Neither the men of social and financial standing who now compose the boards of our charitable institutions, nor the specialists now active in their aid, but now commonly excluded from those boards, are equal to the whole duty. Only men of affairs are competent to the business management of their trust. Only men in comparison withdrawn from the public eye in the long exercise of special aptitude are competent to its professional conduct. The men of means and the men of ends must join forces in order to the best achievement of their common purpose.

The practical application of the principle of control by mixed boards presents various questions.

Is the demand that all the different forms of professional skill utilized by a corporation shall be represented therein an ideal realizable in the instance of large institutions? Theoretically no; practically yes. All the expert ability employed will in a measure be represented by each professional member; and by rotation in office among them, the recurrent grasp by the board of the affairs of the foundation may be extended to minutiae in any degree.

Again, is it wise to place experts in charge of experts? The point may be debated, but is irrelevant. The positive system does not propose to do so, but to give them a share in controlling others. The question—Who shall decide when doctors disagree?—finds its answer when another equal authority is present to add considerations beyond the scope of either. Such deciding voices are provided for in the mixed boards contemplated in the positive system. Its ideal is that every form of consideration which enters into the work in hand shall have its representative in the body which controls.

Again, should the experts employed by a charitable corporation be eligible thereto, or ought its professional membership to be chosen outside? Choice from the staff suggests a double doubt. Suppose a superior officer and his subordinate chosen; would not their equality on the board weaken the administrative control of the superior? No; for the equality is that of ultimate authority. The superior exercises his control as the delegate of the inferior as well as of himself and others. The inferior who disputed it would question his own right. There is no surer means of interesting any one in subordination than to give him power. The doubt has another bearing. It also reflects the importance of the individual interests at stake in the case of employees. Will not their concern for their pay as a rule dominate their concern for their work?

The democracy of similarity says yes. The craving for money is the dominating motive in all men at all times. The democracy of individuality says no, basing its reply on a distinction. As social affairs are now arranged, some money is a perpetual necessity to us all, hardly less inexorable than the air we breathe. Else why should men and women still starve among us? But more money is an increasing luxury, the desire for which may be outweighed by many other interests. The *auri sacra fames* is an illegitimate child of the hunger for bread. In the case of the paid expert in a charitable corporation, some money is at most times assured, and motives are at all times present capable of tempering the desire for more. There are thus two reasons why his interest in his pay will not certainly dominate his interest in his work. His salary, while always moderate, is within limits safe; and the long exercise of his special aptitudes is at once fruit and source of motives apart from those of gain. The patience with which the specialist follows his task is the result of the fascinating germinal power of the ideas upon it of which his brain is the theater, and which his hand transfers to real life. They may become an efficient anti-toxin for the *cacoethes habendi.* Those who have had much to do with experts can echo the statement of Renan: "The reason why my judgments of human nature are a surprise to men of the world is that they have not seen what I have seen." To admit a rule by which experts when paid shall be excluded from charitable boards is to commit the absurdity of at once recognizing the exceptional man and treating him as if he were like all other men. Other grounds of bias, the desires for honor and power, unpaid members share with him. The receipt of pay as well will not disqualify those worthy of it.

Again, how are the permissive and the positive systems respectively related to the rights of free thought and free speech? These universal rights, so-called, are in essence duties of men in power. They should see to it that they do not so uphold the social order as to bar its advance. While all authority, therefore, is obligated to reduce to a minimum its repression of ideas and their utterance, no organization of control will absolutely prevent all danger of too high an interpretation of this minimum. But a system by which seekers after truth in corporate service themselves share in the management tends to keep it within bounds. The positive system of corporate control thus obviates a danger to freedom inherent in the permissive system. It comes to the aid of free thought and free speech, entails a liberation of the spiritual forces within a nation.

The inclusion in charitable boards of men experienced in the actual accomplishment of their purposes is not new in this country either as a fact or an ideal. Their representation, never wholly lacking, is growing, and its extension is advocated with authority.

Frequently, if not commonly, a single chief executive officer, the head of the staff, is included in the board of trustees. The old ideal of the all-round man lingers in this provision, here swollen to impossible proportions. The admitted difficulty of finding satisfactory executive heads for institutions of the humanities is the sign of an unreasonable demand upon human capacity. No single executive, however active and talented, can embody in himself various types of modern professional knowledge and skill. The due representation of men of ends in any considerable corporation will always be a number greater than unity. A fair fraction of the board must be selected from their ranks. The demand upon the executive is thereby decreased to the manageable proportions of a business leadership, either with or without a special professional function.

Specialists have found a place already in a number of our scientific and artistic corporations. The charter of a noted scientific school, affiliated with a university, stipulates that of the corporation of nine, one-third shall always be professors or ex-professors of the school. In another institute a larger proportion are persons in immediate control of the scientific work. No commanding need of appeal to the community for financial support existing in these cases, the men of ends have taken their natural place in the management along with men of means. Among museums of art more than one has chosen trustees from its own working staff and those of neighboring institutions.

In our chief universities, it has become the practice to allow the alumni a large representation in the board of trustees. Of the two bodies of persons concerned in the actual achievement of the teaching purpose, the teachers and the taught, this practice accords to one, the taught, its share in ultimate management. The provision suggests, and may be believed to announce, a second, by which the other body, the teachers, will gain a similar representation. The class of alumni trustees has for its logical complement a class of faculty trustees; a class more indispensable to vital university success than their predecessors, in that they represent not the subjects but the source of university discipline. The step has found prominent advocates. In the *Atlantic Monthly* for September, 1905, President Pritchett asks "Shall the university become a business corporation?" He suggests that the business of graduating men has little to do with the art of educating them, and concludes "In the settlement of the larger questions of administration . . . . may not some council composed of trustees and faculty jointly share the responsibility to advantage? . . . . Today we need, in my judgment, to concern ourselves in the university with the spiritual side of administration." In articles entitled "University Control" published in *Science* in 1906 and 1912, Professor Cattell proposes that professors should take their place with alumni and interested members of the community in the corporation of a university, and reports favoring opinions from a large majority of those holding the most important scientific chairs in the country. In his report for 1911–12 as president of Cornell University, Dr. Schurman writes: "The only ultimately satisfactory solution of the problem of the government of our universities is the concession to the professorate of representation on the board of trustees or regents." Such agreement in a recommendation is a prophecy of its acceptance.

When the day of the expert arrives, every corporation employing specialists will have its class of professional members, whether in a majority or a minority, whether chosen within or outside the staff, whether for limited periods or without term. Historical causes have both denied and begun to restore to expert ability in this country a place in the corporations to whose work it is necessary. The system of positive control by mixed boards is a final settlement of the question of the corporate sphere of the expert because the right settlement, granting to competence its share in the management of competence. The day of the expert brightens on the horizon. Let us welcome its advancing beams. Either we ourselves, or our early successors, will be called to labor in its full sunshine.

Following the presidential address the Chair called upon the Secretary for a demonstration and discussion of the use of moving pictures in museums.

Secretary Rea.—"We are all acquainted with the remarkable vogue of the 'movies' at the present time. Nothing need be said of the popularity of this form of entertainment. I think we all realize also that in these moving pictures we have a remarkable educational possibility. We know that the class of films shown in the commercial theaters is often far from desirable, but we also know that they sometimes show very good pictures, although they seldom take full advantage of the educational possibilities of these pictures. I stated earlier in the day the case of a theater in Charleston which showed twice a film of strong local interest without even announcing it in any of its advertisements.

"The question I wish to discuss is the possibility of using these moving pictures in the educational work of museums. Last December, as I watched a demonstration of one of the machines which you will see this evening, the idea came into my mind that if the museums of the country, particularly the smaller museums, could have such a means of attracting people, and if through the agency of the museums the full educational value of these pictures could be utilized, both the museums and the general cause of education would profit to a large degree.

"The moving picture machine commonly used in commercial theaters presents a number of disadvantages for introduction into museum work. Among these the fire hazard is perhaps one of the most serious, since these machines require an experienced operator and a fireproof booth. The cost of film is undoubtedly another serious obstacle to the wide use of moving pictures. The machine itself is comparatively inexpensive, but standard film costs in this country from ten to fifteen cents a foot. I understand that it can be bought abroad in quantity for perhaps seven or eight cents. At these rates it is evident that a large investment would be necessary if many subjects were to be shown and that much of this expensive film would be idle a considerable portion of the time. It is a difficult matter to rent film except on a large scale because of the difficulty of making the necessary arrangements with dealers. Only museums in or near large cities can depend with any satisfaction upon rented films.

"Another difficulty in the use of the usual commercial machines for museum purposes is the impossibility of stopping the film at points where the subject requires detailed study or explanation. With some of the machines which I have been investigating it is possible to stop the film in this way. The determining factor in this is the amount of heat generated by the lamp. The type of film generally used is highly inflammable and cannot be exposed for more than a fraction of a second to the light from a high-powered arc lamp. I consider the possibility of stopping the film at various points to demonstrate the subject in detail one of the most desirable qualities to be sought after.

"I have mentioned these difficulties to show that the problem is not a simple one, but I am inclined to think that all of the objections cited may be avoided in one way or another. If this can be done I believe it would be of the greatest advantage to museums throughout the country to establish through the Association of Museums a circulating library of the best educational films in biology, geography, and travel, and to assist museums in obtaining a suitable projection machine for showing these films. An adequate library of films would probably cost about $5000. I believe, however, that it would enable many small museums to arouse much keener interest in their communities and to undertake formal cooperation with their public school systems in such a manner as to open new possibilities of activity to the museums and to render an important educational service to cities throughout the country."

Following the introductory remarks of the Secretary two moving picture machines were then demonstrated to the Association. One of these is the Pathescope made by Pathé Frères of Paris. This machine uses the tungsten lamp for illumination, thus eliminating all fire risk, but necessarily limiting the machine to a short working distance from the screen. The machine may be turned by hand or supplied with a motor. The current is drawn from an ordinary incandescent lighting circuit with either direct or alternating current. It is stated that a new model of this machine will allow the stopping of the film at any point. A non-inflammable film is used. This is a miniature film about half the width of the standard film and about half the length for the same number of pictures.

The second machine demonstrated is that made by the Victor Animatograph Company, which uses standard film and a small pencil arc giving off only a moderate amount of heat. This machine cannot be stopped in the middle of a run, but can be instantly changed to lantern slide projection.

The Secretary stated that several other machines using light with very little heat were also under consideration. It was not considered necessary to demonstrate the usual commercial machines as these are so well known.

Following the demonstration a general discussion of the use of moving pictures in museum work ensued as follows:

Mr. H. E. Sargent (*Kent Scientific Museum, Grand Rapids*).—"We have a Congregational church in Grand Rapids, the minister of which is one of the up-to-date people. Not having an evening service in the church, he proposed last year to substitute a pleasant Sunday afternoon in which the moving picture instrument should feature. It was secured and installed. I cannot give you the exact figures, but between six and seven hundred people see the moving picture films on Sunday afternoons. Great difficulty has been experienced in getting the class of films we want.

"This is a Sunday afternoon affair, but the fact is that the people of the United States are ready to go and see instructive moving picture films. We have substituted organ recitals in one or two instances, and they are not a success, but whenever the moving pictures come on the people are there.

"We also have a Playground Association which is very much alive. We put a moving picture outfit into the hands of the director, and every evening during the winter that outfit is at one of the schools, which are used as social centers. The school is packed full, but the director finds it difficult to get good educational films. The people are there and are ready for them.

"I believe that if our museums could be supplied with films of this kind, they would have no difficulty in getting the people interested. I think films could be used to show the magnificent things which are in our largest museums, of which the people generally have no conception."

Treasurer Wilson.—"I am somewhat uncertain as to the value of moving pictures for the illustration of educational lectures. The explanations shown on all the films I have seen are to my mind absolutely worthless, and I believe it is necessary to have a combination of moving pictures, lantern slides, and lectures."

Dr. Carlos E. Cummings (*Buffalo Society of Natural Sciences*).—"Mr. President, I have been quite intimately associated with the production of films and slides in educational work for the last ten or twelve years, and I do not believe that moving pictures can be advantageously used in this work because the moving picture is essentially an entertainment. The subject is shown so rapidly that the children fail to get a permanent or consecutive impression. As a matter of curiosity I have tried the experiment of comparing compositions written by children on subjects shown by moving pictures and on similar subjects shown by lantern slides and lectures. I find in every case that the second method produces better results. The consensus of opinion seems to be that you cannot educate a man in the theater, he does not go there for education but for amusement, and I do not believe you can get children to look upon moving pictures in a serious way.

"If you are going to use moving picture machines, I would recommend that you buy the best in the market of the standard type and put in fire shutters, fire proof booths, and all other requirements of the underwriters."

Mr. Frederick L. Lewton (*United States National Museum*).—"I would like to say for Mr. Rea's benefit that the Department of Agriculture is experimenting with a small portable machine. I have seen one demonstration of this machine which was not very satisfactory, but I believe it has been greatly improved since that time. It uses acetylene light."

In concluding the discussion the Secretary stated that he had considered the smaller machines primarily for the purpose of reducing the fire hazard and of endeavoring to determine whether it is practicable to stop the film at desirable points for further demonstration. He agreed with Dr. Cummings that it is essential that the moving pictures be used as an adjunct only to lectures. He stated that in view of the doubt which had been expressed regarding the use of moving pictures in museum work he would endeavor to carry on in his own museum a thorough test of both machines and films before asking the Association to consider the matter further.

The evening session then adjourned.

SESSION OF WEDNESDAY, MAY 20

Morning

The morning session was called to order by President Gilman at 9.30 a.m. in the Milwaukee Public Museum.

An amendment to Article IV of the Constitution was offered by the Secretary on behalf of the Council, and was unanimously adopted. This amendment provides for one vice-president instead of two, increases the term of the president from one year to two years, and specifies that during the two succeeding years he shall be ineligible for re-election to the presidency, but shall be an ex-officio member of the Council.

The Association then proceeded to the election of officers for the ensuing year, with the following result:

President:

Oliver C. Farrington, Curator of Geology, Field Museum of Natural History, Chicago, Ill.

Vice-President:

Henry R. Howland, Superintendent, Buffalo Society of Natural Sciences, Buffalo, N. Y.

Secretary:

Paul M. Rea, Director, The Charleston Museum, Charleston, S. C.

Assistant Secretary:

Laura L. Weeks, Secretary to the Director, The Charleston Museum, Charleston, S. C.

Treasurer:

W. P. Wilson, Director, The Philadelphia Museums, Philadelphia, Pa.

Councillors, 1914–1917:

Edwin Atlee Barber, Director of the Museum, Pennsylvania Museum and School of Industrial Art, Philadelphia, Pa.

Frank C. Baker, Acting Director, The Chicago Academy of Sciences, Chicago, Ill.

Members of Commission for Museum Cooperation:

George F. Kunz, Honorary Curator of Gems, American Museum of Natural History, New York City.

Edward K. Putnam, Acting Director, Davenport Academy of Sciences, Davenport, Iowa.

The Association then considered the place of meeting for 1915. The Secretary stated that the museums and museum workers of the Pacific Coast cordially desired to have the Association meet on the Coast in 1915. He announced that formal invitations had been received from the Washington State Art Association in Seattle, the Oakland Public Museum, the officials of the Panama-Pacific Exposition in San Francisco, and from a group of seven museums in and near San Francisco, including the San Francisco Memorial Museum, California Academy of Sciences, San Francisco Art Association, Museum of Anthropology of the University of California, Museum of Zoology of the University of California, Leland Stanford Junior Museum, and California State Mining Bureau. The Secretary then stated that while those who extended these invitations were desirous of having the Association make its headquarters in their particular cities, he felt sure that they would all cooperate in whatever selection of meeting places the Association might consider most desirable, and that it would be well for the Association to consider first merely the question as to whether or not it desired to meet on the Coast in 1915, leaving the selection of particular places of meeting for later decision. It had been expected that Mr. George L. Berg, director of the Washington State Art Association, and Mr. C. P. Wilcomb, director of the Oakland Public Museum, would be present at this meeting empowered to represent all the Pacific Coast institutions. Mr. Berg, however, was prevented at the last moment from coming and asked Mr. Charles D. Platt to represent him. Mr. Platt had appeared before the Council and personally presented the very cordial and hearty invitation of the Washington State Art Association. Mr. Platt had offered to remain over for the present session, but since this would have been a serious inconvenience for him the Council felt that it was unnecessary, and the Secretary desired to state that the lack of representation from Seattle was due solely to this cause.

Mr. C. P. Wilcomb then expressed the very earnest desire of the authorities of the Oakland Public Museum that the Association meet in Oakland, and assured the members that every effort would be made by the local people for the success of the convention.

The Secretary then spoke as follows:

Secretary Rea.—"Mr. President, the question of the meeting of this Association on the Pacific Coast is a much more serious and important matter than the selection of any previous place, both because of the difficulty afforded by the long journey, and because of the important relation of this meeting place to the general scope of the Association.

"We have assumed the name of the American Association of Museums, with very broad and far-reaching purposes of a national scope. I would ask you to consider whether it is not essential that we should some time meet on the Pacific Coast if we are to maintain this national organization. It may be easy or it may be difficult to get there, but to decline to meet on the Pacific Coast for the reason that it involves a long trip and considerable expense would imply at once that our field is limited to that of an association of eastern muséums. The question has already been raised as to whether our Association is becoming limited to museums of natural science, and I believe there is a very strong sentiment among our members that it is extremely desirable that we should make it our business to include all kinds of legitimate museums in our membership and in our work. The question of geographical limitation of our field now arises in close relation to that of the thoroughness with which we propose to treat the museum activities of the geographical area in which we work. If we restrict our activity in these two directions we might better call ourselves an association of museums of natural science of the eastern United States. I feel confident that this action would not meet with the general approval of our members.

"A meeting on the Pacific Coast would give opportunity of familiarizing ourselves with the museums of the far west, of forming personal association with their officers, of broadening our own point of view, and of extending to our western museums the stimulus and encouragement which must inevitably result from the visit of this Association. Such a visit will not only increase the interest of our western members but will undoubtedly lead to the acquisition of new members. Such an expression of the interest of the Association in its western territory will naturally draw financial support from this region for the general activities of the Association and for such particular activities as those of the Commission for Museum Cooperation. For these reasons, I believe that our decision with regard to these invitations is of the greatest importance in relation to our future work.

"Desirable as the acceptance of these invitations seems to me, I recognize clearly the difficulty of carrying our convention to a successful conclusion at so great a distance from the homes of most of our members. The Association has something more than two hundred and fifty active members, yet not more than sixty or seventy-five persons usually attend our meetings in Chicago, New York, Boston, Philadelphia, and other places where there are many museums within a narrow radius. I believe there are not more than twenty-five persons from the Atlantic Coast at this meeting If these figures indicate that we could not carry more than ten or a dozen members to the Pacific Coast to represent the enormous area east of the Rocky Mountains, I should feel that the convention must necessarily be somewhat of a farce. On the other hand, it will not be a farce if we carry thirty members to the Pacific Coast in comparison with the sixty who come to our conventions in eastern cities. Approximately this number of persons would be necessary to secure favorable traveling arrangements in going west as a party.

"Before I can form any estimate as to the probable success of a convention on the Pacific Coast I should wish to know (1) how many of the persons who have attended regularly upon our meetings in the east would go to the Coast in 1915; (2) how many of our members who have not regularly attended our eastern meetings would attend one on the Coast; (3) how many of the persons in the far western museums would participate actively in the convention, not merely by coming to such meetings as we may have in their immediate vicinity, but by joining our party in its visits to museums along the whole length of the Coast; (4) how many new members a western meeting would be likely to bring into the Association."

Following the remarks of the Secretary the Association voted to meet on the Pacific Coast in 1915, referring the selection of the place or places to the Council for decision.

Dr. C. F. Millspaugh, curator of botany in the Field Museum of Natural History, Chicago, then presented the following paper:

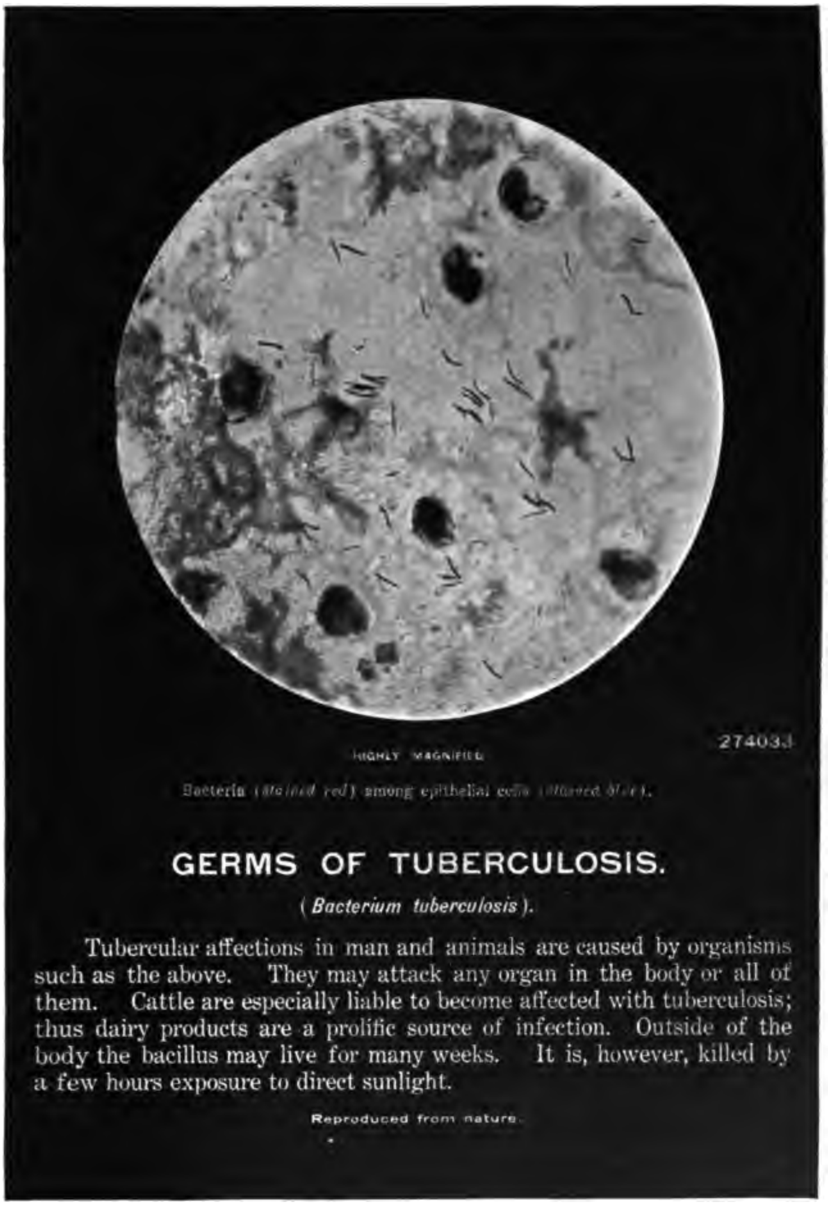
A SUBSTITUTE FOR THE MICROSCOPE IN MUSEUM INSTALLATION

One of the installations that is costly and at the same time of comparatively little value in a museum is the battery of microscopes so often arranged for the public display of minute species.

It is seldom indeed that a person peeping through the eye-piece of a microscope can see even the field clearly if he is unaccustomed to its use; or appreciate which are the objects he is expected to view and which are the motes and beams that are usually accessory thereto. This is lamentable when we consider the large number of microscopic species comprised in each division of natural history; and appreciate that it is the life beyond the compass of human vision, rather than the visible, that more strongly appeals to the mind of the layman.

Again it is certain that large models of microscopic things installed upon pedestals in some of our museums fail to convey the idea that the originals *are* microscopic and not of the size of lizards and crocodiles. For these reasons I have cast about for an installation that would convey a truer and more adequate impression to the eye and mind of the observer. How far I may have succeeded in this I will leave the lantern slides that I am about to show you, and the installation in the Field Museum, to prove for themselves.

The substance of the idea is this: To make exact, but enlarged reproductions of microscopic fields which shall include not only the objects they contain but the accessories as well. The field of the microscope is represented by a circular opening 4½ inches in diameter cut in the upper half of a black cardboard; the lower half being devoted to a printed label explaining the contents of the field. This is in order that the observer may view the objects and read concerning them at the same time. This black card is mounted upon a transparent plaque of plate glass and the object, or objects (cleverly and realistically reproduced in glass), are scattered about in the circular field. These reproductions are far more educational than the objects themselves for they are modeled in all their dimensions instead of being flat and unconvincing. The clear glass field of the circle may be either painted or modeled in semblance to the surroundings of the living object when necessary to a better understanding. These plaques are of unit size (6⅝ x 9 inches) and are grouped upon a plate of ground glass inclined away from the observer at an angle. The case designed and constructed for the display of this type of installation at the Field Museum is trapezoid in form, 6 feet 4 inches high. The base, 3 x 8 feet, is 30 inches high. The sashes of the trapezoid slant at an angle of 15° and are each glazed with a single sheet of plate glass 7 feet 6 inches x 3 feet 4 inches. The top and ends are of glass to admit light. The slanting ground glass plates are set within the case at the same angle as the sash and adjustable as to their distance from it. They are supported above by two suspended septa, adjustable, and painted dead black. These septa serve two purposes beside their support of the glass, namely: as a background for the general labels describing groups; and as a screen to prevent the observer from seeing through the case to those beyond. The floor of the case between the two slant-



274033

HIGHLY MAGNIFIED

Bacteria (*stained red*) among epithelial cells (*stained blue*).

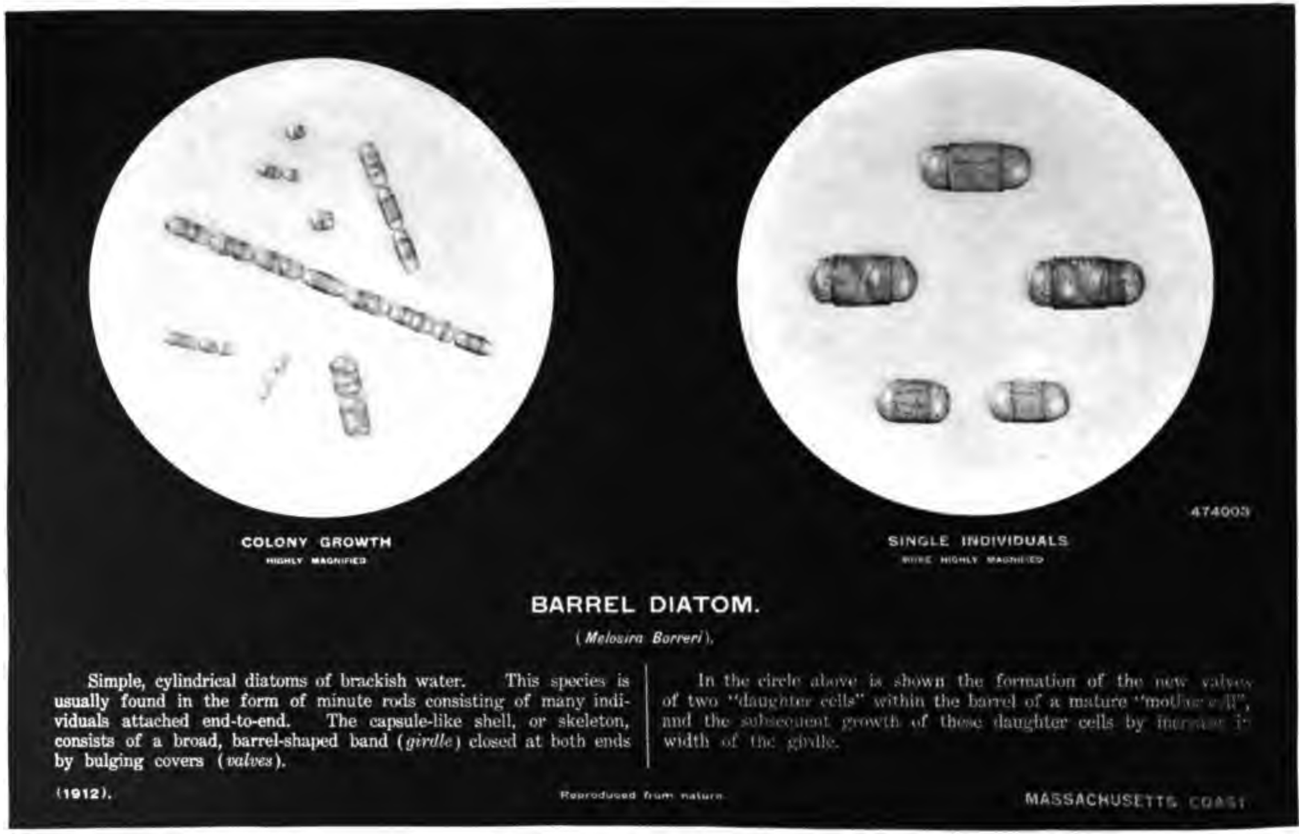
GERMS OF TUBERCULOSIS.

(*Bacterium tuberculosis*).

Tubercular affections in man and animals are caused by organisms such as the above. They may attack any organ in the body or all of them. Cattle are especially liable to become affected with tuberculosis; thus dairy products are a prolific source of infection. Outside of the body the bacillus may live for many weeks. It is, however, killed by a few hours exposure to direct sunlight.

Reproduced from nature.

REPRODUCTION OF A MICROSCOPIC FIELD AS USED IN THE FIELD MUSEUM OF NATURAL HISTORY



COLONY GROWTH
HIGHLY MAGNIFIED

SINGLE INDIVIDUALS
MORE HIGHLY MAGNIFIED

474003

BARREL DIATOM.

(*Melosira Borreri*).

Simple, cylindrical diatoms of brackish water. This species is usually found in the form of minute rods consisting of many individuals attached end-to-end. The capsule-like shell, or skeleton, consists of a broad, barrel-shaped band (*girdle*) closed at both ends by bulging covers (*valves*).

In the circle above is shown the formation of the new valves of two "daughter cells" within the barrel of a mature "mother cell", and the subsequent growth of these daughter cells by increase in width of the girdle.

(1912).

Reproduced from nature.

MASSACHUSETTS COAST

REPRODUCTION OF MICROSCOPIC FIELDS AS USED IN THE FIELD MUSEUM OF NATURAL HISTORY

ing plates of ground glass is painted a brilliant white to serve as a reflector, while all parts of the case between the plates of ground glass and the sash are coated dead black for obscurity. The object of utilizing the trapezoid form is that uniformity of case height may be maintained in the halls and yet bring all parts of the installation close to the eye.

Within this case the black card plaques are placed upon the ground glass plate so closely together that the only light reaching the focussed eye is that passing through the reproduced microscope field, and a narrow space separating each plaque from its neighbor to avoid confusion of objects.

Other unit plaques, having a square field instead of a round one, are utilized to illustrate important facts of growth and reproduction in each group installed.

Distasteful as is the question of money cost in connection with educational productions, it is ever recurring, and we of this Association aim to be practical as well as skilful, artistic, and scientific; therefore I will state that the actual cost of the installation of the group of bacteria (composed of 10 different species units; 2 life history units, a triple unit showing 20 bacterial forms, and a quadruplet illustrating the cultivation of bacteria) was $463.16. I will leave it to your own computation as to how many microscope outfits, with oil-immersion lenses, would be required to even inadequately exhibit the same amount of material. I make it 35 outfits each costing at least $100, that is to say about eight times as much as the cost of the installation I describe. Add to this the salary of a competent demonstrator in constant attendance and you have the answer.

Dr. Millspaugh then caused to be projected on the screen a unit reproducing the bacterium of tuberculosis, stained red, with an epithelial cell background painted blue; the bacterium of splenic fever; the micrococcus of pneumonia; the spirochaete of syphilis stained purple upon a background modeled to represent hepatic tissue; the meningococcus of epidemic meningitis upon a background representing phagocytes digesting them; the bacterium of diphtheria; the bacillus of typhoid; the microspira of cholera; the bacilli that cause the souring of milk; the bacteria of nitrification; a square opening unit showing four stages of spore formation in bacteria, and another graphically depicting multiplication of bacteria. In the diatomaceae: a unit of *Rhizosolenia* diatoms in chain formation and single individuals;

a *Planktonella*; a double unit showing *Triceratium favus* singly and one with its valves and girdles separated; a unit of *Licmophora* showing two colonies anchored upon a bit of alga; a chain of *Bacteriastrum*; and a double unit of *Melosira* illustrating the colony growth and several more highly magnified individuals showing the formation of daughter cells. In the green algae he showed a free swimming alga with its eye-spot and cilia; the *Pleurococcus* of green slime; the Water Net, *Hydrodictyon*; and a double unit showing a branching green alga (*Cladophora*) and a few cells with the formed and the escaping zoöspores. In the desmids three units, one containing three beautiful forms of *Staurastrum*, one of *Docidium* and *Closterium*; and one convincingly illustrating conjugation. He closed his talk with a view of one of the trapezoid cases in situ, installed.

Mr. Boyd P. Rothrock, curator of the Pennsylvania State Museum, Harrisburg, presented the next paper as follows:

A NEW METHOD OF PREPARING EXHIBITS OF FISHES

In the mounting of fishes I found that shrinkage, particularly about the head, could not be prevented where the skin was used. Plaster casts were unsatisfactory. Besides being fragile, plaster is not a suitable substance on which to color in a life-like manner, and if prepared so as to prevent absorption of color and silvered to bring out the correct tone to the underparts the fine detail was almost entirely lost. Plastic casts, unless kept in a certain temperature and a certain light soon lost definition.

In June, 1910, I discovered a way to overcome these difficulties and produced my first specimen, though at that time I did not have suitable apparatus to properly develop or perfect the system. The idea of making an electrotype of specimens occurred to me the previous fall, but experts in that line of work rather discouraged me, stating that it would be a difficult matter to get a copper cast from molds that were so extremely concave. Not having access to an electro-plating plant I induced one of our electricians to fix for me a series parallel of lights which I could connect with the lighting current and reduce the voltage from 220 to 1 or ½ volt, and yet retain sufficient amperage to work. Not having a tank I used a couple of battery jars and commenced my experiments. The first step was to secure a perfect mold. For this

I tried glue, but though I could harden it and have it sufficiently insoluble it lacked definition. The same difficulty occurred with the use of plaster, while wax and paraffin were too soft to retain fine lines; but by using one part of pure white beeswax and two parts paraffin I secured good results. Then coating the mold with graphite and making perfect connections with copper wire I was successful in getting a perfect copper cast of a minnow and was convinced of the practical use of this method. Trying color on the copper cast I found that silver must be used to secure the natural appearance. Finding that neither silver leaf nor aluminum leaf was satisfactory, I tried a very light plating of pure silver on the copper fish and discovered that if not plated as heavily as would be needed for ordinary silver plating it did not obscure in the least any of the minute markings on the fish, and if the colorist used as little color as possible to give the natural tones, the silver would not be obscured but would have the same value as in the living fish.

The next step was to get the correct coloring and I started photographing fish at the stream, using the Lumière Autochrome plate and thus secured a plate that can be used as a transparency, and which gives the actual color of the fish as it comes from the water.

About this time I found the kind of apparatus I particularly needed and having proved the possibilities of my method, this apparatus was furnished me. I then found it would hasten the work to set my molds in a brass case or box similar to the plating cases used by electrotypers, using different sizes according to the size of the fishes. I must here mention that before the superfluous copper is removed from about the edges of the cast or electrotype, it should be made chemically clean and backed with a sufficient thickness of solder to give it strength and to prevent loss of the original form, also to fasten the supports necessary for placing on exhibition. Before these supports are attached the edges should be trimmed to the exact outline of the specimen. To do this I use a small carborundum wheel that can be run at a fairly rapid speed. To cut out close about the fins I use a dental burr with a flexible cable driven by a small electric motor and find it both accurate and rapid. The next step should be the attachment of either pins, machine threaded screws, or simply narrow strips of sheet copper to act as hangers or supports in placing the fish in its final position. These may be simply soldered fast to the back of the cast and will not show when the fish is in position. If strips of sheet copper are used they may be punched and fastened with small wood screws. If threaded screws are used they are soldered to the reverse side of the specimen and may be fastened by the use of nuts, all depending on how the specimen is to be placed and the size of the fish. This should be done before the fish is silver-plated as the heat required to solder the hangers may stain the thin white silver coating. After it is silver-plated and polished it must be lacquered with an A No. 1 lacquer to prevent oxidation and chemical action of the colors on the silver.

In placing color on the metal casts one cannot use the ordinary methods. Permanent colors must be used, preferably what is known as glaze colors. They must be applied in the manner known to artists as glazing using a minimum amount of color, and as a medium a fine light transparent varnish instead of turpentine or oil. The varnish prevents the colors creeping while wet, and using the very smallest amount of color possible allows the silver to show through and gives the fish the natural sheen. Since securing satisfactory results in this manner of reproducing fishes, I have tried small reptiles and find that it works equally well.

Not being satisfied with showing fish on boards or panels for museum exhibits, I tried a plan which I hope to install when I can secure the space needed. This is to represent an aquarium with each species in habitat groups, showing the bed of the stream and the shore line, with the vegetable life and natural conditions worked out in detail. This may be done by using a series of units that can be placed in any room or hall where light, either natural or artificial, can be regulated, as all depends on the arrangement of the angles of the several panes of glass used as a background within these units. I believe this system of metal reproduction of fishes is the only one that can be so used, as the specimens may be placed in any position within the unit, the fins may be extended or closed, the body straight or curved. Not being of perishable material they will not be susceptible to atmospheric changes and that eliminates any possibility of loss of detail with time.

I expect many will consider this a very expensive process for museum purposes, but when the durability and accuracy are considered it cannot be looked upon as expensive. The greatest cost is the installation of the motor-dynamo and tanks. The amount of copper and copper solution used does not require much money. The pure silver and the silver solution is expensive but so little is required on each specimen that the cost cannot be considered great. And so far as the work of coloring is concerned, it is no more expensive than the coloring of plaster or wax casts.

This work is practically in its infancy but admits of great possibilities, and I am sure if taken up and properly followed it will be found superior to anything heretofore adopted.

Mr. Frank C. Baker, acting director of the Chicago Academy of Sciences, presented the following paper:

USE OF ENLARGED PHOTOGRAPHS IN MUSEUM GROUPS[1]

Present day demands of the museum-visiting public have raised many problems, the solution of which engages much of the time of the curators of these institutions. Chief among these has been the question of the character of the exhibits presented in our halls for the pleasure and education of the general public. We can no longer place our birds, insects, and shells in serried ranks, with the enlightening information that this or that specimen is *Planesticus migratorius*, that it lives in Chicago, that it was shot on July 13, and that it was given by Mr. Tom Jones. We must now vitalize our exhibits. The bird or insect must become alive and the exhibit must show something of its home life, its life history, or its relation to its particular environment or to man. This changing attitude of both visitor and custodian gave birth to the habitat group, a greater or less number of which, of more or less simplicity, now adorn the halls of the majority of our larger museums.

Not until recently has it been possible for the Chicago Academy of Sciences to enter the field of the scenic grouping of exhibits. About three years ago Mr. LaVerne W. Noyes, president of the board of trustees, became greatly interested in the museum and by volunteering to finance the project made it possible to rearrange the museum along modern lines. The results obtained have fully justified the time and expense involved in this work.

It was realized that these new groups should be constructed from a psychological standpoint. They should therefore be striking enough to demand the instant attention of the visitor. This viewpoint necessitated the complete isolation of the group as well as proper lighting to secure the best effect. For this purpose each group was placed inside of a case to be viewed only through a window and the lighting chosen was electricity, the lights being so arranged that they could be reflected in any direction so as to modify the light for the particular effect needed to produce the desired illusion. By this means, moonlight, sunlight, and twilight effects became possible, thereby enabling us to show many of the animals at their times of greatest activity.

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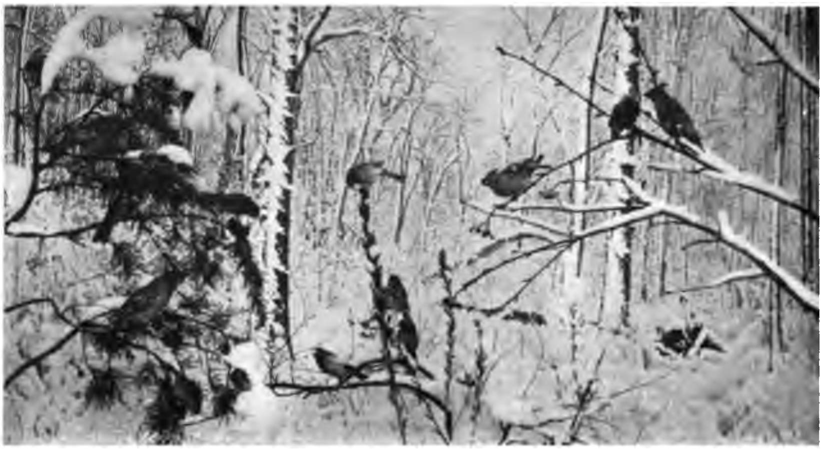
[1] Published by permission of the director of the museum, Mr. Wallace W. Atwood, under whose direction a large part of the work has been done.

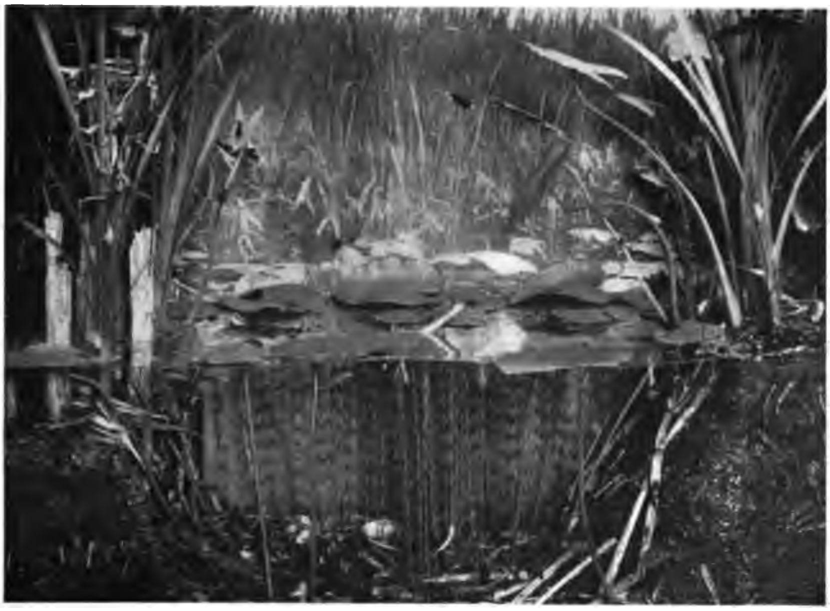
It was further demonstrated that the groups presented the best effect when viewed from a distance, and a series of bird groups was planned to be suspended from the dome in such a manner that the observer could not approach nearer than seven feet. The suggestion for this unique exhibit was made by Mr. Noyes and his idea has been successfully carried out by the museum staff.

At first painted backgrounds were used, but as the work progressed it became evident that enlarged photographs could be used to better advantage and also reduce the cost of construction. These were first tried out in the smaller habitat groups of insects and the results were so satisfactory that they were also used for the larger groups.

The modus operandi of preparing one of these habitat groups with the photographic background is as follows: after selecting the subject to be represented, a suitable photographic negative is secured. This is taken on a large plate, and the objects in the foreground are made in such proportion that when enlarged they will be very nearly life size. Having secured the negative, an enlargement is then made on a piece of bromide paper a trifle larger than the finished background. This size varies, but for the majority of the groups is 5 x 12 feet. At first a paper which is made 40 inches wide was used. This necessitated making the background in three pieces and joining them, which added largely to the expense, especially of coloring. Finally an imported paper was found which is made 60 inches wide and this was adopted. The making of this larger picture opened up several difficulties on account of its size, and the method finally resorted to was that used for developing Kodak films, the work necessitating the help of several men.

The photograph is then carefully mounted and placed in a wooden frame made just small enough to fit snugly into the finished case which will encompass the group. It is now ready to be colored. To avoid the square, cut-off ends, which are so objectionable in some groups, the background is made to form a parabolic curve. A thin board, cut to





GROUPS WITH PHOTOGRAPHIC BACKGROUNDS IN THE CHICAGO ACADEMY OF SCIENCES

the size of the case, is painted with zinc white, giving a dull finish, and placed on top of the frame to serve as a reflector for the rays of light. The lights are placed in a large show-case reflector suspended from the top of the frame by two slings of aluminum, which permits the light to be directed at any angle, so that either direct or reflected light may be used.

The backgrounds are carefully colored with oil paints, the foreground being variously modified to correspond with the group, in order that the fade-away or perspective may be correct and the joint between the made foreground and the background may be obscured as much as possible. This effect has not been easy to secure on account of the curved ends, but by painting in an object and matching this with a bold object in the foreground the desired effect has been secured and in some cases in a most satisfactory manner.

The photographic background possesses certain advantages over the painted background. Chief among these is the preservation of local scenery which is disappearing before the advance of civilization. A case in point is a district northwest of Chicago known as Bowmanville, which for many years has been the resort of nature lovers who visited this virgin woodland for the study of wild flowers, birds, and insects. This area has recently been made into a subdivision and the only tangible evidences of its existence will be the three or four groups in the Academy Museum, in which photographic backgrounds of this region have been used. And then again but a small fraction of the amount of detail and perspective could be produced in a painting that is shown in a photograph.

These backgrounds have been made by Mr. Frank M. Woodruff, curator of ornithology, and to him belongs the credit of successfully overcoming the many difficulties encountered during the progress of our work. Mr. Woodruff has also designed and constructed many of the new groups in which these backgrounds are in use. To Mrs. Eva Rowley has fallen the task of coloring the photographs, and to her great credit is due for the excellent manner in which she has put life into the colorless prints.

The photographic backgrounds described above have been installed in cases devoted to mammal, bird, and insect life, thirty-seven of which are now on exhibition in the museum. They are equally well adapted for other zoological subjects, as well as for geologic, ethnologic, and physiographic groupings.

Mr. Lancaster D. Burling, invertebrate paleontologist of the Geological Survey of Canada and official delegate of the Survey at the convention, presented the following paper:

THE POPULARIZATION OF PALEONTOLOGY[1]

Fossils are those direct evidences of organic life which have been preserved by burial in the earth and either have survived or promise to survive the ordinary processes of decay. Paleontology, the study of fossils, is a subject of sufficient magnitude and of such absorbing interest that you will perhaps pardon an introductory allusion to some illustrations of its scope and value before presenting ways in which its popularization may be accomplished.

Paleontologists concern themselves chiefly with the life of past ages, prehistoric life, popularly speaking, but geologic time has been and is continuous and, since we recognize no break between the present and the past, paleontology merges imperceptibly into anthropology and biology. The biologist studies life as it exists today, the paleontologist studies life as it has existed during an infinite succession of similar stages. The biologist endeavors to see in the embryonic forms of contemporaneous life a recapitulation of its ancestors, the paleontologist laboriously separates the pages of the past and scans the growth of life through countless ages. Biologists have discovered true ancestral features in the teeth of certain owl and parrot embryos, in the hairiness of unborn whales, in the termination of the alimentary canal in many embryonic sharks, etc., but the development of eons can not be crowded into the growth of days or even weeks and the biologist is disappointed in the phyletic results of his study of prenatal characters. Paleontology constantly betrays the parallelism between the epembryology of the individual and the adult characteristics of its immediate ancestors, and to its student the gaps or failures in the ontogenetic record do not loom so large. His disappointment is his inability to find a single vestige of primordial life. He carries back the organic record into ages so remote that time, in years, runs into millions and does not even sense the dawn of life. Evolution long had traced its course on evanescent seas and greets his eyes a stranded heritage full too complete. If life had grown full fledged within some cosmic egg, its advent could have been but little more conspicuous. Biology bereft of embryos would seem as clear, for in the oldest[2] fossil-bearing rocks are corals, worms, brachiopods, mollusca, and crustacea, and the immediately succeeding strata add representatives of all the larger classes of invertebrates.

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[1] Published by permission of the director of the Geological Survey of Canada.

Geologic time, since the advent of these earliest fossils, has been divided into twelve or more grand systems, of such magnitude that each had an average range of two or three million years. A single one of these has been divided into 33 life zones, each comparable to the one with which we are today familiar. In 1905 zoölogists were credited with knowing 470,000 different kinds of animals, but the total number in the world was placed by Stiles at 5 to 10 times that number. If each of the 33 life zones just mentioned (and there may have been many more) had supported one-fourth the present animal population of our earth, the fauna of this one division of the twelve would have comprised over 30,000,000 species.[3] From this division paleontologists have described some 15,000 forms, or as has been calculated[3] about one in 54 of those likely to become fossilized.

The relative order of these life zones is indicated by the superposition of the different strata comprising the earth's crust, a section which is nowhere complete but which can be shown by wide correlation to be made up of the surprising total of some 250,000 feet, nearly 50 miles. This is the result of steady accumulation, infinitely slow, and by methods still at work.

From place to place, from time to time, this rate has varied greatly, but has averaged, according to a recent estimate, one foot in 833 years, the thickness of a sheet of blotting paper every second year. What such figures mean in paleontology may be illustrated by the known dispersion of the recent *Littorina littorea.* This edible gastropod was imported from Europe and had become characteristic of Halifax harbor in 1852. Its progress southward was a matter of observation and in fifty years it had reached the shores of Delaware. If the spread of geologic faunas, therefore, were as fast, or slow, the time occupied in the deposition of little more than a foot of strata would have been ample for the migration of any single local fauna to the remotest corners of the earth. The untold geographies of the past prevented such widespread dispersion by topographic barriers as intricately patterned as our own but the vastness of the time involved assures to paleontologists the essential contemporaneity of identical fossil faunas over continental areas. Certain species occurring more than once in the same section frequently disappear completely from the intervening beds. Where they went we do not know but the following calculation may afford us some conception of the vast duration of these little gaps. Even if the rate of sedimentation during one of these intervals be placed at ten times the average its duration would have given our recent *Littorina* ample leisure for a journey to the moon and back. That the returning wanderer can hardly be distinguished from its predecessor is but another illustration of the slowness of evolution.

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[2] The writer purposely omits all reference in this paper to the fragmentary fossils of pre-Cambrian time.

[3] Schuchert, *The Paleontologic Record,* 1910, pp. 12-13.

The wealth of fossil species available to the paleontologist may be indicated by the following: A fossil coral reef but a few feet thick at the falls of the Ohio has yielded several hundred species; a surface 3 x 5 inches in extent has been known to contain over 100 identifiable species,[4] not counting ostracods and other microscopic organisms; square miles of rock in the Mississippi valley are covered by fossil brachiopods at the rate of 290 to the square foot. When we realize that these are two-dimensional figures only and that these layers are preceded by and covered with an almost endless succession of other layers, all more or less fossiliferous and presenting countless variations, we glimpse the treasure house of paleontology.

Biologists whose efforts center on the living tissues have expected little from a science which depends so largely upon the outer form, the shell and framework. Yet fossil forms include the frozen mammoths of Siberian tundras, the mummied parrots of Peruvian wastes, the scaly skin of ancient reptiles, the moulted test of extinct crabs, the unborn young of fossil mothers, the scattered teeth of vanished sharks, the prehistoric print of wandering feet, the channeled trails of worms or snails, the hardened molds of jelly fish, the stony ink bags of ancestral squids, the scales and muscles of primeval fish, the filmy fronds of giant ferns, the pent-up life of Baltic amber, the chiseled wings of insects, and the leaves of trees. In many groups the relation between the parts, both hard and soft, is intimate and in few groups is this more pronounced than in the brachiopods and crinoids, forms whose lingering remnants owe their present status to the study of ancestral hordes. But ancient rocks grow daily more responsive, and almost the earliest of our fossiliferous horizons now yields, in a tracery as delicate as the finest steel engraving, and as thin, impressions of extinct crustaceans with their fringed and jointed antennae, their jointed legs, claws, gills, eye facets, mouth parts, stomach, and intestines; worms with hairy and retractile tongues (they are preserved both protruded and withdrawn) and showing the mouth, the intestinal canal, the annulations of the body, and the hairs or papillae with which it was covered; other worms with eyes and tentacles and side rows of leglike structures; globular worms entirely hidden by a mat of plates; and caterpillar-like worms with eyes and tentacles and either partly or entirely covered with bunches of bristles; sea cucumbers of the common or cigar-shaped type and curious jelly-fish-like forms showing the muscles of the umbrella, both openings and the stomachlike enlargement of the intestinal canal, and the system of radial canals; jelly fishes; sponges, branched and bulbous; and brachiopods with fringing setae and extended foot—an almost unbelievable assemblage of a hundred or more distinct genera sealed up some 30,000,000 years ago in natural sarcophagi.

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[4] Bassler, *The Paleontologic Record*, 1910, p. 7.

Such finds are rare, the one just listed is unique, and gives bright promise for the future.

The Museum of the Geological Survey of Canada has now on exhibition four groups intended to popularize the subject of paleontology and has several more in preparation. The exhibited groups comprise: (1) A local group illustrating on different shelves and in stratigraphic order the fossils peculiar to each of the systems exposed within the city limits, not as museum specimens, but in the form of slabs showing as large an association of forms as possible, and listing not the scientific name but the quarry or the street corner or the park from which the specimens were collected. This exhibit is accompanied by a colored geological map of the city, two cross sections, also colored, showing the relations across the river valley and along the river bluff, a line with which the public is familiar, and a vertical section showing the thickness of the different beds. The exhibit is to be accompanied by an actual vertical section composed of suitable blocks representing the relative thickness and character of the different strata. (2) An exhibit of reef-building fossil corals, piled up without labels, trays, or blocks, and with little regard to anything but their general effect, and accompanied by plain and colored photographs of the Great Barrier Reef of Australia at low tide and of a group of coral polyps. (3) An exhibit of the wonderful crustacean, worm, sea cucumber, sponge, and jelly fish collection just described, with a seven-foot panoramic photograph of the actual locality from which the fossils were obtained and of the surrounding mountains. In this exhibit the popular notes regarding each of the different forms are accompanied by the scientific names, chiefly because they are so largely derived from local features. For example the locality lies between Wapta Peak and Mount Field and one of the striking forms has received the name *Waptia fieldensis*. (4) An exhibit of the various ways in which fossils occur: actual remains, casts, molds, replacements, in concretions, in the different types of sedimentary rock, etc.

The planned exhibits include: (1) A case showing the different types of invertebrates preserved as fossils, with illustrations of their own variations and of the different ways in which each may be preserved. (2) An exhibit illustrating the rise and fall of the different types during geologic epochs, using large-sized models of a trilobite, a crab, a snail, etc., to represent the group treated, and relief models of North America colored to show the geography of each ancient epoch.

These are listed for the sake of illustration only. Museums whose fossil groups outnumber and outrank our own are known to everyone, and groups await the time, the space, the funds, the wherewithal of all. The following outline of possible exhibits is suggestive, not complete, and does not claim originality:

1. Different types of animals that have been found as fossils: such an exhibit would show that protozoans, jelly fish, and naked worms are found, as well as skeletoned remains.

2. Rise and fall of fossil types in geologic time, as in the exhibit outlined.

3. Ways in which fossils occur: a jelly fish as a rounded mold and as a carbonaceous film, insects in fossil resin, plants in coal, etc.

4. Processes of fossilization: casts in natural molds, replacements, and many of the illustrations of occurrence.

5. Forms and structures produced by fossils: worm castings, trails, and footprints.

6. Forms and structures produced by geologic agents and resembling fossils: concretions, seaweed-like dendritic markings, coral-like septaria.

7. Alteration of fossils: geodization, mechanical deformation, secondary replacement.

8. Ways in which organic life becomes entombed: the miring of vertebrates in asphaltum pools.

9. Methods of fossil preparation: a slab covered with refractory

clay before and after the application of caustic potash, a shattered bone and its restored double.

10. Ontogeny of features and of forms: the growth of spines, the suturing and coiling of ammonites, the feet of horses, the teeth of mammals.

11. Phylogeny of groups.

12. Restorations: for invertebrates this field lies almost untouched.

13. Use of local material for purely local groups, with maps and sections along a lake shore or a boulevard, for example, like the one outlined for Ottawa.

14. Abundance of fossil material; both of single species and of varied forms and showing both vertical and horizontal distribution. I have in mind the comparison of two identical blocks of fossiliferous rock; one whole, the other separated along a dozen planes and laid open like the pages of a book.

15. Actual field relations of fossil faunas.

16. Old age features.

17. Comparison of surviving primitive forms with their ancestral fossil types: the garpike, sturgeon, shark.

18. Comparison of post-embryonic forms with their immediate ancestors, illustrations of the biogenetic law.

19. The principles involved in the restoration of an animal from fragmentary remains.

20. The beginnings of dependent life: commensalism, parasitism, etc.

Of such our methods; this our aim: To kindle in the hearts of men somewhat of our regard for her whom nature has so singularly favored. For other sciences the now is fraught with visions of the past, but organic nature did not leave the storied pages of our science to the mercies of the present; she has engraved the tablets of the past with long preserved and faithful copies of her ever changing handiwork.

Mr. Harlan I. Smith, archeologist of the Geological Survey of Canada, then presented two papers entitled "Label Relief Map for Showing Distribution" and "A Cheap Case for a Small Museum." The former paper is printed below:

A LABEL RELIEF MAP FOR SHOWING DISTRIBUTION

A serviceable and economical relief map for showing distribution and occurrence of specimens in connection with museum labels has recently been prepared by Mr. P. A. Taverner of the Museum of the Geological Survey, Ottawa, Canada. It is intended for the use of any department of the museum. A hemisphere eight inches in diameter was first made by taking a cast of a mould formed by revolving an arc made of tin in setting plaster of Paris. The map of the part of the earth showing North America and the circumpolar region was then drawn on this, the ocean depths were excavated in the plaster, and the principal mountain ranges were indicated by laying on clay and modelling, the vertical scale being approximate and necessarily much exaggerated. The general trend of the large ocean currents was indicated by shallow lines on the ocean beds. Lines of latitude and longitude were also indicated. A plaster mould was made and from this relief models were cast in plaster. It is proposed to get an electrolytic impression by stereotype process for their reproduction in plaster or other material when large numbers are required. The cost will be only a few cents each. When plaster is used it is first colored to harmonize with the color of the label that the map is to elucidate. The place of occurrence or distribution is then colored or stippled in such color as is desired. Besides showing the mountain ranges, and thereby graphically explaining the causes of various intrusive faunal distributions, it does away with the distortions always present in flat maps. This process may be used later for other regions and on various scales. In fact a smaller portion of this model may be used.

Dr. Hermon C. Bumpus, business manager of the University of Wisconsin, then presented the following paper:

A STANDARD FORM FOR THE TABULATION OF MUSEUM RECEIPTS

It is not profitable to discuss before the members of this Association the need of and advantages to be derived from standardizing the financial statements of American museums. The need is recognized without argument, and the advantages are perfectly well known to members of this organization. Our problem is not academic—it is practical. As professional advocates of system, order, and classification, we ought to adopt a common form for the presentation of our financial transactions, and this common form duly adopted by several institutions will, of itself, establish a standard. Confining our attention for the present to the sources of revenue, what shall this standard be?

Although no two are constructed on the same plan, it is probable that the tabulation of receipts now in use by any American museum is quite worthy of defense as a local report. It has been shaped by local conditions and has all of the structural characters that pertain to things that are evolved in isolation and which survive by special favor. But you should understand at the outset that it is not our purpose to destroy systems that have proved themselves sufficient to meet local conditions. It is rather our intention merely to supplement the systems now in vogue with a 'tabulation summary' prepared in such general terms as to meet the conditions common to all museums.

The trustees of an endowed institution in issuing a financial report have certain distinct purposes. The amount of money received from gifts, the increase of the endowment, the investment of trust funds, are with them matters of controlling interest. In state and municipal institutions, however, these factors are much less important than are legislative and aldermanic grants, and the financial statements of publicly supported institutions are colored accordingly.

A general examination of the financial reports of endowed museums will show that a preponderance of attention is given to the recording of special funds, to the listing of investments, and to the registration of benefactors. Such reports are often indicative of approved trusteeship and they punctiliously account for the handling—one might almost say nursing—of funds held in trust; but they do not give an equivalent accounting of what is accomplished by the expenditure of the income from these funds. They show very clearly what money has been spent, but they do not show with equal clearness what is gotten for the money. Thus the trusteeship of the fund seems to be of more importance than the administorship of the income; the operation of caring for funds a matter of greater importance than their use. This is perfectly natural, for unless there is abundant evidence that trust funds are carefully handled and that the wishes of benefactors are faithfully recognized, a disastrous lack of confidence is bound to develop. Moreover, the trustees of endowed institutions, or at least those trustees serving on committees which have to do with trust funds, are frequently trustees or directors in other institutions, who, as bankers or business men, are trained to mathematical accuracy in the handling of money and in the rendering of accounts, without perhaps having an intimate knowledge of the various processes connected with the operation of institutions which latter they are accustomed to leave to their general managers.

The operation of an educational institution, however, is in many ways different from the operation of a business concern; one is for making money, the other is for spending money. The difficulties which lie in the way of measuring intellectual effort, and of weighing and valuing educational output, defeat the purpose of those who attempt to carry comparisons of the two processes beyond the field of rough generalization.

The governing boards of publicly supported institutions are directly responsible to the people and not to themselves or to real or imaginary benefactors. Bank directors and men of large business interests are only incidentally appointed on these boards, and consequently the controlling conservatism of the ordinary trustee of an endowed institution gives way to the aggression of those who are in closer touch with the people and who have less regard for tradition, who wish to show results, and whose financial statements give evidence of a greater interest in *using* money in order to secure an adequate *quid pro quo* than in *conserving* it. This also is natural, for the members of the average municipal board hold office for a relatively short time. They are not interested in accumulating funds for their successors; they are not obliged to wait for the good will and good intentions of prospective benefactors, and they can apply funds directly where they are needed.

Any standard form for the tabulation of receipts to be applicable to the needs of both endowed and publicly supported institutions must therefore be arranged with regard to these general resemblances and differences. If the standard form is properly drafted it will, when put into operation, accentuate the characteristic features of the various classes of institutions and will give information that may be easily understood by the layman. To have the greatest utility it must not be an example of technique in accountancy, but rather a condensed report articulating at one extremity with the books of the accountant but otherwise free to perform its function of presenting simple facts in a simple way.

The summary, moreover, must be so drafted as to include all revenue producing sources. Its major divisions must be generic, inclusive, and capable of definition. Its specific entries—the sub-divisions of the generic captions—must be determined upon with caution, and provision made for subordinate sources of income that are local in character. It should include cash transactions only and its supporting schedules should give precise and sufficient information in regard to all essential details. It should not include (except possibly by reference) gifts such as buildings, pictures, books, collections, or other material, unless the cash therefor has actually passed through the books of the treasurer, and the person preparing the summary must continually bear in mind the difference between accessions of cash and accessions of other material.

The speaker, after having tried out several other methods, believes that the five groups into which the sources of income of educational institutions are classified by the Carnegie Foundation is natural and sufficient and when applied to museums will bring these great educational instruments into still closer connection. A sample sheet is appended to this paper.

RECEIPTS FROM STUDENTS AND VISITORS

In this tabulation the "Receipts from students and visitors" represent a distinct source of revenue. It is the price paid by the consumer of museum privileges. Where art schools are maintained and direct instruction is given, the receipts may be quite considerable, but the total amount received from students and visitors is generally absurdly small, although it is an index of a willingness on the part of the public to pay for the educational material that the museum is supplying, and inasmuch as it is the cost to those who are willing to pay for that which will add to their educational, intellectual, and physical betterment, it is to this extent a test of the seriousness of the local effort for individual improvement.

It is customary for our legislators and governing boards to look upon museum work in a broad way, nevertheless, while fully realizing that the student and visitor are getting far more than that for which they actually pay, legislators are not indifferent to the quantity of the contribution that is made by the recipient.

Certain subdivisions of this group of receipts are given in the summary at the close of this paper. It is the intent that each entry will have some explanatory schedule which will state how the several sums are derived and will give other information of value to the reader.

RECEIPTS FROM INVESTMENTS

Let us now consider, as a unit, the group of receipts that are derived from invested funds.

It seems to the speaker that the *income* from any endowment or from invested funds that are held in trust, or controlled by a governing board, should appear under this caption no matter from what source originally derived, and full information in the supporting schedules should be given concerning the purpose of each and every fund with conditions and restrictions clearly outlined.

Subdivisions of this group of receipts are given in the summary merely as general examples.

In any real statement the supporting schedules would give information in regard to the general condition under which the funds were originally established, what has been accomplished by the use of the income and any other information that is pertinent to reports of this nature.

It must not be forgotten that this subdivision has to do primarily with the income from invested funds and with income only. If a new fund is established it must first appear in its entirety as "Gifts;" the fund is then added to the list of endowments and the income will then appear year after year as a receipt under this caption.

RECEIPTS FROM GRANTS

The increased use of museum facilities, of museum equipment, and of museum men by federal, state and municipal governments has been an encouraging feature of the history of museum activity during the past decade. Grants from the federal government and from various states for the support of expositions are not on the decline. They have been and are being made for the purpose of helping very good causes; they are given because enlightened people believe it is good business to encourage the general educational processes. The views of people who are not enlightened have no influence anyway.

Any satisfactory tabulation of receipts should show to what extent the institution concerned is receiving *general* support through the appropriation of public moneys, and of equal interest, if not of equal importance, are entries which show to what extent public moneys are appropriated for *designated* purposes in order that certain specific results may follow.

I believe that it would be possible for any institution here represented to secure from Washington, for temporary exhibition purposes, almost any material that it might desire, and when one considers the good work that might be done in any community by the temporary exhibition of material illustrating the work that the federal government is doing for public health, conservation, agriculture and the development of our natural resources, we feel blameworthy in not seizing our opportunities, assuming all the duties that museums are destined to perform, and asking adequate appropriations therefor. Progressive universities have discovered that the people are willing to pay and to pay liberally for public service, and the museums that adopt "Service" as their watchword will not find a diminution in their receipts from public grants. The classification of the receipts from grants should provide for, indeed should emphasize, those amounts that are given for designated purposes, and particularly if the initiative comes from the grantor. This, of course, does not mean that the museum should be slothful in indicating to legislative bodies wherein its equipment, material, or personnel might be of public service, and it takes for granted the continuation of any and all appropriations, if such exist, for general standard expenses.

RECEIPTS FROM GIFTS

A fourth class of financial receipts consists of donations of cash made by individuals or organizations. Generally these are for some designated purpose, but occasionally they are for general use by the institution in such manner as the governing board may elect. In the larger number of cases a small gift of cash implies a prompt expenditure, but any cash donation or bequest, large or small, first must be registered as a gift and then used as the donor or benefactor intended. Thus a sum of money having been accepted and entered under this caption as a gift may then be transferred to the endowment account, if the donor so intended, where it is listed as a special fund and thereafter only the income will appear in the summary of receipts for the year, and even then not as a receipt from gifts, but under the caption "Receipts from investments."

RECEIPTS FROM MINOR SOURCES

In addition to the four groups of receipts thus given, viz., from visitors and students, investments, grants, and gifts, there are certain minor sources, none of which has sufficient importance or is sufficiently characteristic of all museums to have captional value, but the aggregate may be quite considerable in amount and may contribute accordingly to the general cost of museum operation.

The sales from a well conducted museum may be of substantial assistance towards its support. Compensation for appraisals, inspections, tests, analyses, etc., made or executed by museum experts in museum laboratories, in private establishments, or in the field, may be sufficient in amount to render some of this work self-supporting and in any event is of argumentative value before legislative committees.

Another group might include charges that have been made and collected for modeling, for taxidermy, and the like.

The form which is here submitted, as already stated, is substantially that which, after careful study, was recommended in 1910 by the Carnegie Foundation for the Advancement of Teaching. It has been in use by many American universities and although the tabulation may not be in all particulars just what you need for your particular museum, it certainly meets with the general needs of all educational institutions. Moreover, and also as already stated, the adoption by those here assembled of a standard summary of this kind need not compel any institution to reconstruct its present methods of bookkeeping or its present method of rendering its annual report. It may only involve the preparation of a single sheet of paper, or a single page of recapitulation, a mere reclassification of receipts, but so constructed that conditions in all museums become automatically comparable.

I would ask, then, that a committee be appointed to prepare and report upon this matter and that this committee consider the advisability of adopting the following five major divisions: I. Receipts from visitors and students. II. Receipts from investments. III. Receipts from grants. IV. Receipts from gifts. V. Receipts from minor sources.

The adoption of subdivisions under these captions may be left for subsequent action, trusting that the advantages derived from such standardizing will become so obvious that at no far distant time we shall find ourselves prepared to extend the process to uniformity in the rendering of our statements of expenditures.

SUMMARY OF RECEIPTS[1]

For the Fiscal Year ending June 30, 1914

RECEIPTS FROM STUDENTS AND VISITORS:				
Tuition fees (Paid Courses in Art or Science)	Schedule	1	$8,000.00	
Admission fees, General	"	2	7,411.00	
Admission fees, Special lectures, etc.	"	3	2,800.00	
Locker fees	"	4	25.00	
Services of guides	"	5	22.00	
				$18,258.00
RECEIPTS FROM INVESTMENTS:				
General endowment fund, unrestricted	"	6	$58,938.01	
W. E. Seabury fund, restricted to mineralogy	"	7	700.00	
K. C. Milward fund, restricted to ethnology	"	8	1,373.00	
Interest on credit balances	"	9	722.71	
Interest on pension fund	"	10	15.09	
				61,748.81
RECEIPTS FROM GRANTS:				
From Federal Government				
Field work in palaeontology	"	11	$3,500.00	
Publication American ethnology	"	12	1,800.00	
One-half share Pacific Exposition	"	13	12,000.00	
From State				
Illustrated lectures	"	14	8,000.00	
Traveling collections	"	15	12,000.00	
From City				
General maintenance and operation	"	16	200,000.00	
New construction	"	17	250,000.00	
				487,300.00
RECEIPTS FROM GIFTS:				
Fees, Life Members				
Applied to endowment fund	"	18	$4,300.00	
Fees, Annual Members				
For general purposes	"	19	24,910.00	
Subscriptions for purchase of meteorites	"	20	500.00	
Subscriptions for purchase of paintings	"	21	1,763.00	
Subscriptions for Congo Expedition	"	22	15,000.00	
Subscriptions for publication of special memoir	"	23	2,500.00	
				48,973.00

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[1] This table indicates the form of summarizing receipts advocated by Dr. Bumpus.

RECEIPTS FROM MINOR SOURCES:

Sales of duplicate specimens, models, etc.	Schedule	24	$1,748.00	
Sales of publications, handbooks, guides	"	25	327.00	
Services of Lecturers and Lantern	"	26	650.00	
Temporary Loan of Models	"	27	150.00	
Expert Advice in re Art Purchases	"	28	500.00	
Subscriptions to Pension Fund transferred to Endowment Fund	"	29	6,262.00	
Miscellaneous	"	30	17.00	
				9,654.00
TOTAL RECEIPTS				$625,933.81

Dr. Bumpus.—"To stimulate discussion and to test the sentiment of the Association I move you, Mr. President, the adoption of the following five major divisions as a standard for the tabulation of museum receipts: (1) Receipts from visitors and students. (2) Receipts from investments. (3) Receipts from grants. (4) Receipts from gifts. (5) Receipts from various sources.

"I would further move that the Chair appoint a committee of three to consider this subject during the coming year and to report at the next meeting."

The motion was duly seconded. In the discussion which ensued much interest was shown in the subject which had been presented by Dr. Bumpus and the form of tabulation which he suggested met with general approval. The Association felt, however, that the adoption of his motion at this time would be premature, and it was finally voted that the matter which he had presented be referred to the Commission for Museum Cooperation.

The morning session was then adjourned for luncheon tendered by the Public Museum of the City of Milwaukee. Following the luncheon, the members inspected the Layton Art Gallery under the guidance of Mr. George Raab, director of the Gallery. After this inspection the city departments of Milwaukee provided automobiles to take the Association through the parks and points of interest. In the evening the Association proceeded to Chicago for the sessions of the third day.

SESSION OF THURSDAY, MAY 21

Morning

The morning session was called to order by President Gilman at 9.30 a.m. in the Art Institute of Chicago.

Mr. C. G. Rathmann, director of the Educational Museum of the Public Schools of St. Louis, presented the following paper:

THE MUSEUM AND THE SCHOOLS IN EUROPE

Two years ago I made a four months' trip to visit the schools in the larger cities of the leading countries of Europe and to make myself acquainted with school work and educational conditions on the other side of the ocean through personal observation. I used every opportunity I had to visit the museums in these places and to study their contents and the scope of their work, but especially to ascertain in what way and to what extent they coöperate with the schools.

I visited schools and museums in Stockholm and Copenhagen, in Hamburg, Berlin, Leipsic, Dresden, Frankfort, Mannheim, Munich, and Cologne, in Vienna, Zurich, Brussels, Paris, and London.

Everywhere I found that European educators have gotten away from the idea that all instruction must be given in the classroom. The quite universal opinion among the leaders is that the work in the schoolroom must be supplemented by observation and study of the things and conditions in the world where the pupils can be brought into actual contact with them, in the park, in the field, and in the forest, in the zoological gardens, in the museums, in the art galleries, and in the theaters. The doctrine preached by Comenius: "As far as possible men are to be taught to become wise, not by books, but by the heavens, the earth, oaks and beeches, that is, they must learn to know and examine things themselves and not the testimony and observations of others about the things," is embodied in the school program.

Telling the child or having him read about our earth, about the great changes produced on its surface through the activity of nature and man, about the people, their life and work and their adjustment to their environment—appealing to his imagination only—will not give the child vivid or lasting impressions or arouse in him the desire and develop the power to do his own exploring and discovering. To make the child acquainted with the world in which he lives, we must bring him into personal contact with the world, European teachers say.

The work in the schoolroom is supplemented by:

1. The school excursion for the study of nature, home geography, and local history.

2. The study of collections of objects and pictures found in the schools.

3. Visits to public museums, art galleries, and theaters.

The school excursion plays a prominent part in the life of European schools. Teachers and pupils wander into field and forest to study types of plant and animal life in their natural surroundings. They observe the conditions of their physical environment, the roadbeds, slopes, hills, brooks, and ponds, the careful study of which will enable them to picture to themselves the features of land and water on the earth. For the study of the human environment, man and his wants, his industrial and commercial pursuits, visits are made to shops, houses in course of erection, quarries, factories, foundries, and public institutions and the actual conditions are observed and later discussed in the classroom.

The many and beautiful statues and monuments in every large European city are pointed out to the pupils to arouse in them an interest in the study of history and to awaken a desire to become acquainted with the great men and women and what they have done for their city, state, and country.

Many things, however, which cannot be reached in the home surroundings and with which the children should come into personal contact, are brought into the schoolroom. For the more detailed study of plant life, large gardens maintained by the educational authorities furnish the material. In the corridor of most of the German schoolhouses you find a bulletin stating for every week during the season, what plants may be had for use in the schoolroom.

The animals that do not live in the surroundings of the home are studied in the zoological garden. But the study of the animals of the home environment, the mammals, birds, fishes, insects, and amphibians that live around the children, is far more important. Most of them cannot be observed in a living state in the class room.

In every schoolhouse in the cities I visited in Germany, Austria, Switzerland, Denmark, and Sweden, there is a small museum consisting of collections of specimens, mounted or in alcohol, of the animal world, minerals, and large colored charts and photographs for the illustration of geography, history, and nature study—just such collections as are furnished the schools by a number of public museums in our country.

To make the instruction of elementary physics, to which far more time and attention are given in European than in American schools, more interesting, intelligible, and efficient, the schools have very complete collections of physical apparatus.

An annual appropriation for a certain amount of such material for each school is made by the school authorities, and the selection of the material is left to the principal. He is guided in this selection and enabled to secure the material which seems to be most suitable for his school by an institution which is maintained in every large city of the five countries I named and in Brussels and Paris—the school museum.

THE SCHOOL MUSEUM

The European school museum is different in character, scope, and purpose from the institutions bearing the same name in our country. Its object is:

1. To help the principal to select proper illustrative material and apparatus for his school.
2. To furnish the teachers with good reading matter for professional study and cultural improvement.
3. To help the school authorities to select the best and most modern school furniture, school appliances, and various other articles of equipment.
4. To give the schools opportunities for displaying their work.
5. To arrange for lectures for the corps of teachers in the city and its vicinity.

Immense amounts of printed matter, pictures, objects, and apparatus for school purposes are in the market in Europe, as they are here. New things appear every year. It is impossible for the teacher to become acquainted with all of this material and to make his selection.

The boards of managers of these institutions are composed of experienced educators. They make a careful study of literary and technical means of teaching and learning offered by the educational market, and select in a systematic manner all that is most recommendable. The material chosen is placed in the school museum in logical order, so that principals and teachers may choose what in their opinion will serve them best and what they can secure with the appropriation given them.

Publishers, manufacturers of school furniture and school equipment, and commercial firms which sell objects and devices for instruction in geography and nature study, consult the museums to feel the pulse of the schools and to see what is wanted by them. School boards contemplating the erection of new school houses study the models and plans of buildings which are exhibited in the museum.

Textbooks and apparatus used in other countries, school reports, and courses of study from everywhere are on exhibition.

The school museum is thus an exchange of educational thought, ideals, and progress, where teachers can obtain suggestions, guidance, and inspiration. That it is exceedingly helpful in elevating the standard of the work cannot be questioned. The one discouraging fact is that, as to illustrative material, the teachers examining the rich display of fine things in the museum at the beginning of the school term can, with the limited amount appropriated, get only a comparatively small part of what they think they should have.

I visited the school museum in Copenhagen, one of the best equipped and most successful in Europe. It was founded in 1887 and is located in a spacious three-story building with five additional rooms in an adjoining house. The entire lower floor of the building is occupied by the library and reading rooms. In the four rooms on the second floor are collections for the illustration of history, arithmetic, drawing, penmanship, religious and ethical instruction, and material used in the instruction of the blind. The five rooms in the third story contain illustrative material for physiology, anatomy, zoology, botany, and geography. In the annex are collections for the teaching of physics and chemistry, for sloyd and girls' hand work, for school equipment, and for temporary exhibits. One room contains a very interesting display of material used in the Danish schools ever since schools existed in the kingdom.

The museum is a state institution and its work reaches every part of Denmark. The teachers make good use of it; the number of visits during the year 1912–13 being more than 9000. The members of the staff of managers give throughout the year talks and lectures on educational topics and on the use of the illustrative material not only to teachers in Copenhagen, but in all parts of the little country.

The first school museum in the world was founded in 1851 in Stuttgart in Germany, the country of educational museums, as W. S. Monroe calls it. Germany now outranks all other countries as to number and degree of efficiency of school museums. There is a strong movement on foot to establish a Reichschulmuseum, a state museum for the whole empire like those in Paris, St. Petersburg, and Tokio.

The German school museums are conducted on the same principle and along the same lines as that in Copenhagen.

Berlin has two institutions of this kind, the Deutsche Schulmuseum, established and maintained by the teachers of the German capital, and the Staedtische Schulmuseum, under the control of the city school authorities.

The city school museum contains 14 rooms. The material is distributed as follows:

Room 1. Scientific library.
“ 2. Pedagogical library.
“ 3. Reference library.
“ 4. Magazines and reading room.
“ 5. Collections of illustrative material for the primary grades and the schools for defective children.
“ 6. Collections of material for nature study.
“ 7. Collections of material for religious instruction, music and penmanship.
“ 8. Collections of material for drawing.
“ 9. Collections of material for mathematics.
“ 10. Collections of material for domestic art.
“ 11. Collections of material for geography.
“ 12. Collections of material for school equipment.
“ 13. Collections of material for ancient history.
“ 14. Collections of material for medieval and modern history.

The Frankfort school museum is only four years old, but it promises to become one of the best in Germany. Among the many things from which the schools may select, I found the graphophone and a large stock of records representing the best in music and in literature.

There are at present about fifty school museums in Germany, all of which play a prominent part in the school life of the places in which they are located.

In all of these institutions I found thousands of large colored wall charts for the illustration of botany, zoology, mineralogy, anatomy and physiology, geography, and history. Each school possesses a large collection of them, and they adorn the walls of every schoolroom in Germany.

The Lehrmittelsammlung (collection of school material) in Vienna is one of the best equipped institutions in Europe. Each school has a generous supply of illustrative material, notably of apparatus for the teaching of elementary physics.

Next to the Musée Pedagogique in Paris, the most widely known of the European school museums, is the Pestalozzianum in Zurich. It is a state institution and forms the exchange for educational thought and the bureau of information for teachers for the eastern i.e., the German-speaking part of Switzerland. It is one of the richest museums as to school material of all kinds. But the buildings in which it is housed are small, old, and dilapidated and are unable to hold the many gifts and contributions that pour in year after year from friends and patrons of the museum. While the other museums in Zurich, Basel, and Bern are amply cared for, the Pestalozzianum seems as to physical conditions, to be the stepchild among the museums of eastern Switzerland.

This museum is, as far as I could ascertain, the only one which lends collections of certain kinds of illustrative material to the schools. Of particular interest to me were the Pestalozzi room and the Froebel room, which contain many relics from the schools of the former and the kindergarten of the latter.

The best known school museum and the one with the widest scope of work in Europe is the Musée Pedagogique in Paris. It was founded in 1879 and is a state institution.

It consists of three principal sections, la bibliothèque, l'office, and le musée

The library, containing 80,000 volumes, is very popular and is extensively used by the Parisian teachers from the kindergarten to the university.

The office is a bureau of information which is consulted by the educators of all parts of France, and which corresponds with educational institutions in every country in the world. It seeks and gives information on everything pertaining to education, art, science, and literature. Each of the principal living languages is mastered by some one of the many officials in this bureau. The office also assumes the work of a teachers' agency, furnishing especially schools in foreign countries with teachers of French and the schools in France with instructors in modern languages. Results of educational research and practical experience in the different classes of schools are published by the office.

The museum has a large store of illustrative material for use in the schools. Notably large is the collection of lantern slides which may be borrowed for the illustration of lectures. In 1910 more than 30,000 collections of slides were lent to schools and different organizations. The institution has several halls for meetings of teachers and organizations interested in public welfare and education.

So much for the school museums. They keep the schools and their various departments in touch with each other. They make the educators acquainted with new thoughts, new ideals, and new progress in the educational field. They enable teachers to secure for their schools the materials by means of which they can give life and reality to their school work, by means of which they can bring the world into the schoolroom.

THE PUBLIC MUSEUMS

The illustrative material in the schools is naturally limited. Many things with which the children should become acquainted in order to receive vivid and permanent impressions of what is taught and to understand and realize better the life, work, and progress of the different peoples, cannot be furnished by the schools. All of these things are placed within reach of the school children by the public museums.

The illustrative material in the school collections, while limited, is, if intelligently used, amply sufficient to arouse in the pupils a desire to know more about the world in which they live. The teachers tell them where they can satisfy their thirst for knowledge and get information on things and conditions in all parts of the world. They tell them about these storehouses of knowledge and their wealth of treasures from all corners of the globe—the public museums.

The material which the teachers need in addition to what is furnished them by the school authorities is not sent to the schools by the museums, as is done by some of the school museums and to some extent by the public museums in our country. The children must come to the museum to observe and study it.

Teachers take their classes to the museum to present various features of work with the help of the material they find there. Such visits are encouraged by both the school and museum authorities; they are expected in all of the cities; they are prescribed by the school boards in Stockholm and Munich. In the latter place the annual reports of the principals must show that at least five visits to museums by the middle and higher classes have been made during the year. The teachers are made to understand that the museum is but another kind of school whose purpose it is to give information and knowledge, but that to give it efficiently, school and museum must work hand in hand.

I visited museums in every place to which I came, but there was none in which I did not see classes from the city elementary, high, continuation, and technical schools; in which I did not see boys and girls, singly or in groups, finding their way to exhibits in which they had become interested through the instruction in the schoolroom.

There are in every one of the cities I visited a number of museums. There are art galleries, historical and ethnological museums, natural history museums, army and navy museums and others. The school children know these institutions, know what they are, what they mean, and what they can give.

The coöperation between schools and museums in most of these cities is firmly established and systematically conducted.

Stockholm has a large number of public museums. They are: the Skansen Open Air Museum, Biologisk Museum, Historical Museum, Nordisk Museum for Ethnology, State Museum of Natural History, Botanical Gardens, Artillery Museum, Museum for Fishery, Swedish Industrial and Commercial Museum, Museum for Postal Service, and National Museum or Art Gallery. All of these institutions are open to classes from the various schools.

In every schoolhouse a bulletin in the lower hall gives information regarding the museums and the regulations governing visits of classes. It gives a list of all the museums and states where they are located, by what street car lines they can be reached, when they are open, and what material the pupils and teachers in the various grades should study. The curators of the various departments acquaint the teachers of the various grades with the material they should look for and instruct them how to use it in connection with their work.

I visited the Nordisk Museum of Natural History, the Biologisk Museum, and Skansen Park.

The latter is an open-air museum, a unique place, as far as I know the only museum of its kind in the world. It is a park about as large as Lincoln Park in Chicago. Scattered over it are the quaint houses, some of them centuries old, as they are found in the various sections of Sweden, in Skane, Darlekarlien, Telemarken, etc. They are not models, but the real dwellings taken from the places which they represent. In them are found the furniture, utensils, decorations, etc., as they are used by the people that occupied them, and the keepers of them are dressed in the styles typical of the various sections of Sweden. Every flower, every shrub, every tree that grows in the Scandinavian countries, and many of the animals that live in them, are found in Skansen Park.

Every day classes of the Stockholm schools may be seen in Skansen. Better opportunities for concrete instruction in the history, the geography, and the flora and fauna of their country could not be given to schools, and pupils and teachers make extensive use of them.

Skansen Park and the Biologisk Museum may be called special schoolrooms for the Stockholm children. The latter institution is in a circular building. In it there is in panoramic form a display of mounted specimens of all the animals which live in the Scandinavian countries. All are excellently well mounted and are exhibited in surroundings which are artistically and skillfully executed imitations of nature. The male and female of each species are shown with their young, and the birds are exhibited with their nests and eggs.

The Biologisk Museum is the classroom for practical study of Scandinavian, and the zoological division of the Nordisk Museum for the study of foreign, animals.

Hamburg has many museums and institutions for scientific research: the Ethnographical Museum, Museum for the History of Hamburg, Industrial Museum, Museum for Natural History, Botanical Museum, State Laboratory for Physics, State Laboratory for Chemistry, and State Observatory. All of these are open to the various classes of schools, but there is no systematic coöperation between schools and museums and, as a result, the excellent institutions in Hamburg are not as extensively used by the schools as are those in Stockholm.

Berlin is richer in museums and art galleries than any other city in Germany. All of them are visited by teachers and pupils from time to time. The institutions to which the teachers are expected to take their pupils, however, and in which no admission fee is asked of visiting classes are the Maerkische Museum, a museum for the history of the Mark Brandenburg, the province in which Berlin is located, the Colonial Museum, the Botanical Gardens, the Zoological Garden, and the City Aquarium. In these institutions classes from the many schools in the city may be found every day.

In Frankfort, the Senkenberg Museum for Natural History, the City Historical Museum, and the Staedel Art Institute offer the schools opportunities for extension work through the use of their varied exhibits.

The number of visits made to the Natural History Museum in 1912 was 114 and they were participated in by 2661 pupils. The Historical Museum was visited by 700 teachers of the various classes of schools and by 900 pupils of the higher classes.

Both of these institutions give courses of lectures to teachers on the material and its use. In the Senkenberg Natural History Museum courses on thirty-six different topics of biology, illustrated by the exhibits in the museum, were given in 1912 to teachers and all others interested.

In Leipsic the Neue Museum (an art gallery), the Grassi Museum for Ethnology, and the Heimatmuseum (a museum for home geography) have established systematic cooperation with the schools.

A unique and most valuable institution is the Heimatmuseum. It was organized by the teachers of Leipsic in 1912. Although but two years old, it contains, as I gather from its last report, a wealth of interesting and most valuable material well classified. Its object is to make the Leipsic children acquainted with the immediate surroundings of their city. The museum is divided into four sections: geological, technological, botanical and zoological. By means of natural objects, models, and photographs, are shown the soil, the development of the soil, models of the different strata of rock formation, the soil products; industrial products, plant life in all its phases, and all the representatives of the animal world that live in the environment of Leipsic. The mounted specimens of animals are exhibited in characteristic positions in artificial reproductions of the surroundings in which they live, much on the plan which is followed in the Biologisk Museum of Stockholm. I know of no museum which could arouse in children a greater interest in all that lives around their homes.

Munich is known for its splendid museums and art galleries, and the museums and the schools coöperate in a highly commendable manner. Visits to museums are required of all the schools. As stated above, the annual reports of the principals must show that at least five visits to museums have been made during the year.

The institutions to which the teachers take their pupils are the wonderful Deutsches Museum, the most complete historic museum of its kind in the world, the Natural History Museum, the Glyptothek (the sculpture hall) and the Alte und Neue Pinakothek (galleries of paintings).

I visited the Naturgeschichtliche Museum in Vienna on a Sunday morning. It is a colossal building and one of the richest I saw as to material. In all of the museums I visited I found a large attendance, but nowhere did I see as many visitors as in this museum in Vienna. It was difficult to pass through the aisles in some of the sections. Upon inquiry in the office when I left, I was told that 10,092 people had passed through the stile on that Sunday morning. The report of the institution for 1912 says that from 1889 to 1910, 6,635,113 persons visited the museum.

I was particularly pleased with the large number of boys and girls who passed through the halls looking for exhibits in which they were interested. I followed a number of them and asked them why they had come, what they wanted to see, and why they wanted to see it. Some pointed out material to me which had been the subject of their instruction in the schoolroom and with which they wanted to become better acquainted. Cases of such independent study of museum exhibits I found in several museums in the different places I visited on my trip.

The principal museums in Zurich are the excellent Landes Museum, an institution somewhat like the Deutsches Museum in Munich, the Kunstgewerbe Museum (industrial museum), the Kunstmuseum, and the Zoological Museum. All of these are open to the schools, but no systematic cooperation exists. Still, the teachers make extensive use of the opportunities afforded by the museums, and in the Landes Museum classes from the different schools may be found every day.

There is no city in the world in which better opportunities for concrete study of the wonderful things at home and abroad are offered to the school children than in London. No city has as many museums, galleries, and other places of educational and historic interest as the British capital and in no city do the museums and schools cooperate in a more systematic and efficient way to make the masses of interesting material accessible to teachers and pupils.

The London County Council in charge of the city schools sends to every school a voluminous pamphlet entitled: Handbook on Educational Visits. This book gives a list of all the museums, art galleries, and other places of interest, and names twenty-four institutions. A full description is given of all features in each of these places that should be observed by and discussed with the children of the different schools and grades. The pamphlet tells where the institutions are located, how they can be reached, when they are open, what help may be received from the curators, and gives the regulations for the visits established by the school and museum authorities.

Visits to all the twenty-four institutions are encouraged, but the authorities expect all schools to avail themselves of the opportunities for additional study offered by the following museums, galleries, and places of historic interest: The British Museum, the Natural History Museum in South Kensington, the National Gallery, the Tate Gallery, the House of Parliament, Westminster Abbey, the Tower, St. Paul's Cathedral, and the Zoological Gardens.

The teachers are expected to make themselves acquainted beforehand with what they wish to have their classes see. To give them the necessary training for efficient work with their pupils, courses of lectures are offered by persons connected with the different institutions.

The Handbook gives a list of places and objects of architectural, historical, archeological, literary, and general interest which may be visited on school excursions, and a list of the parks, open spaces, and other places suitable for the study of nature. To help the teachers in the excursion work, five typical examples of educational country rambles with valuable hints and suggestions form part of the book.

THE THEATER

There is another institution which is drawn into the service of the schools in Germany and Switzerland. From three to five times during the season one of the principal theaters in the larger cities of these countries opens its doors to the teachers and pupils of the higher classes of the elementary schools and the high schools, and presents to them masterpieces of the great German dramatists. Schiller's "Wilhelm Tell" and "Maria Stuart," Lessing's "Nathan der Weise" and "Minna von Barnhelm," Koerner's "Zriny," Hebbel's "Nibelungen," and others are among the dramas that are frequently brought before the children. The visits never fail to awaken in the young people a deep interest in the works of the German poets and in literature in general.

In 1912 the pupils of the schools of Munich attended theatrical performances five times, and those of Berlin, Mannheim and Zurich three times. The schools of Leipsic record six visits to theaters with an attendance of 12,000 children, and the schools of Hamburg nine visits in which 17,000 children took part.

In Hamburg the moving picture show has become an active factor in school work. The school authorities select films illustrating historical events and geographical and industrial conditions and have them presented at the kinematograph theater. The pupils with their teachers attend such presentations during the regular school hours.

CONCLUSION

There are, as you see, a number of factors outside of the schoolroom that play a prominent part in the education of the child in Europe. One of the most important of these is the museum, and the museum is everywhere recognized as a most necessary adjunct to the schools.

The cooperation of the museum is of the highest value to the schools; the teachers fully realize this. But the advantage the museum derives from the school's cooperation is of no less value.

The schools train the boys and girls to become frequent and intelligent visitors of the museums.

The museums in Europe are nearer to the people, the people of all classes, than the museums in America. The people in Europe know the museums better, are more interested in them and value them more highly. They seem to feel that the museums are theirs, that they are maintained for their sake, for the purpose of giving them opportunities to become better acquainted with the world around them. The Europeans seem to look upon museums and libraries as a kind of continuation schools to which all may go to add to their knowledge and to secure information on everything in which they are interested.

The reports of the institutions show a very satisfactory attendance everywhere. On Sundays the museums are crowded. Sunday is the workingman's day in the museum and he visits it with his whole family, for the museum is the workingman's university.

I found in every museum a larger number of visitors than I have met in our own. We need not look far for the reason for this. The people in Europe have been trained through the use of illustrative material in the schools and through museum visits to understand and to appreciate what the museums offer. Boys and girls who, throughout their school course, have been brought into contact with the real things from all parts of the world and have learned to use, to understand, and to value them, will become frequent, interested, and intelligent visitors of the museums.

The American museum must get into closer touch with the schools.

President Gilman.—"I think we all feel that Mr. Rathmann's paper gives us a view of the European attitude toward museums which is most stimulating and ought to be fruitful. This attitude is bringing the museums closer to the people, and I think we ought to look about for the cause of the remoteness which has been only too common in the past. Of course we know that such a museum as the Public Museum of the City of Milwaukee is very close to the people, but there are a great many museums which are not, and it seems to me we ought to find out the cause for this condition. Are there any remarks on this paper?"

Dr. Oliver C. Farrington (Field Museum, Chicago).—"Mr. President, I am glad to testify from personal observation to the splendid work which Mr. Rathmann has done along this line. Some of us had occasion to visit him in St. Louis two or three years ago and we were very much delighted and instructed by seeing the wonderful work which he has done in interesting the public school pupils and in gathering together educational collections. He has been a pioneer in many ways in this work in this country, and I am sure he is a mine of information on this subject."

Mr. Harlan I. Smith, archeologist of the Geological Survey of Canada, then presented a paper descriptive of the reorganization of the Rocky Mountains Park Museum, which had recently been accomplished under his direction. The paper was particularly interesting because of the satisfactory results attained in the reorganization of a small museum in a very limited time, with untrained assistants, and with the expenditure of very little money.

Mr. Neil C. Brooks, curator of the Museum of European Culture of the State University of Illinois, then presented the following paper:

THE MUSEUM OF EUROPEAN CULTURE OF THE UNIVERSITY OF ILLINOIS

What may be called a 'museum of culture,' a museum to illustrate important periods and phases of civilization and of social development, is a type that is comparatively new among university museums. It is significant that at Harvard University with its dozen museums, the three newest ones, the Semitic, the Germanic, and the Social Museum, are all museums of culture in this sense and were all established within the last ten or eleven years. The most important purpose of such a museum is to serve as an educational aid to the departments of history and the social sciences, languages, and literature, just those departments which until recently were thought to need no material equipment except books and perhaps a few maps.

In the summer of 1911 the board of trustees of the University of Illinois authorized the establishment of two museums of culture, a Museum of Classical Archaeology and Art and a Museum of European Culture (other than classical). The two museums are separately administered at present but their essential unity is clearly recognized. The Classical Museum, under the curatorship of Prof. A. S. Pease, has made an excellent beginning. In addition to its casts and models and reproductions of various kinds, it has a considerable number of original objects; most of these are objects assigned to Mr. William C. Hibbard, Jr. of Chicago, by the Egypt Exploration Fund in return for his financial aid and deposited by him in this museum.

It is of the Museum of European Culture however that I wish particularly to speak, not only because as curator I know more about it but because it represents a more novel type of museum. A museum of European culture may seem and in fact is discouragingly broad in its scope. When we consider that the museum at Harvard which started out to be a Germanic museum has limited its scope and become practically a German museum, it may well seem presumptuous to attempt to develop a museum of European culture, which in its most comprehensive form would have to bring to view the outward aspects of European civilization from the earliest times to the present day. Fortunately there is a large usefulness for such a museum on a modest scale illustrating in a meagre way some of the most important cultural movements.

Where to make a modest beginning in this large field is the problem that has confronted me. There are no guiding traditions for a museum of just this type and purpose. My attempt at a solution may be indicated by mentioning briefly the chief classes of objects that have been secured, practically all in reproductions. Especial emphasis has been laid thus far upon the medieval and early modern period, not only as the period in which the roots of our present culture lie, but as a period that needs the aid of illustrative material more than recent times do. About fifty plaster reproductions of statues and reliefs illustrate Romanesque, Gothic, and Renaissance sculpture. About eighty of the best reproductions in color show early masterpieces of painting. These include the admirable reproductions of early Netherland paintings published under the direction of Prof. Pol de Mont of Antwerp. There are reproductions of over fifty small objects of church art to illustrate early ivory carving and metal work and in general to show the peculiarities of the Byzantine, Romanesque, Gothic, and Renaissance styles in their application to the small arts. For miniature painting and paleography the museum has a half dozen original manuscript leaves from the eleventh to the fifteenth century and some sixty reproductions from the fourth century on, half of them in color. These are in swinging frames. There is a small collection of reproductions of seals, about sixty in number, chosen to represent various types and periods, some with historical interest, some with artistic worth.

For prehistoric and early historic culture the museum has an interesting collection of about a hundred objects, mostly weapons and personal ornaments, in galvanoplastic reproduction. These furnish a sort of introduction to the early stages of applied art in Western Europe and especially in Southern Germany (the originals are in the museum in Stuttgart). The collection covers the whole development from the early bronze age to Merovingian times, i.e., to the sixth and seventh centuries of our era.

For the development of warfare there are, in addition to the weapons in the collection just mentioned, some fifty models and casts of weapons from the stone age on, a plaster model in color of a Roman legionary and one of a Franconian warrior of Romano-Germanic times, and four suits of armor in modern reproductions, one of the thirteenth, one of the fifteenth, one of the sixteenth, and one of the seventeenth century. Also bearing upon warfare are a few ship models, a Viking boat, a Hanseatic ship of late fifteenth century for both war and mercantile purposes, a Dutch battleship of the seventeenth century, and the *Santa Maria*, the flagship of Columbus. Logically related to ship models and navigation is a series of *mappaemundi*, or old maps of the world, showing the quaint early conceptions and the gradual increase of geographical knowledge.

The museum plans to gather material of various kinds to illustrate the development of costume. As a beginning it has an exhibit of present-day peasant costumes, consisting of sixty costume manikins or costume dolls made in faithful reproduction of costumes in the various countries of Europe. These are supplemented by four costume figures in full size. A few months ago, before the manikins were shipped, they were exhibited in Munich and attracted considerable attention and newspaper notice, and the firm reports a second similar order, also from an American museum.

The museum plans to secure models of certain typical theaters and other illustrative material for the study of the drama, and has made a beginning with a model of the Fortune Theater of Shakespeare's time. Finally, the museum has a number of miscellaneous models, among them a few Runic inscriptions, a few early musical instruments (including a minnesinger's harp), a prehistoric house urn, a number of facsimiles, etc. It has also considerable material in the form of photographs and prints not on permanent exhibition but used from time to time for temporary exhibits.

The material enumerated has been secured during the past three years at a cost of about $7000, of which about $4500 has been spent during the academic year just coming to an end. The funds come from the regular appropriations made to the university by the state. This independence of charity ought to insure the museum a steady growth. Four or five thousand dollars a year, spent chiefly on reproductions, will soon result in quite a good-sized collection.

At present the Classical Museum and the Museum of European Culture occupy each a wing of one of the floors of Lincoln Hall, a building devoted to advanced undergraduate and graduate work in the social sciences and languages. In time however the university will have a museum building. The present campus plans provide a location for one.

The recognition of the educational value of museums and the value of illustrative material in teaching has, as we know, grown much in recent years, but it needs to grow much more. Teachers of the humanities should realize more than they do that museum material is as essential to the study of history or literature or art as a laboratory is to the study of physics or chemistry. The Museum of European Culture shows evidence already of bringing the instructors of the university to a quickened appreciation of this means of more efficient teaching. To some extent it does a similar service to the high school teachers of the state, hundreds of whom visit it in the course of the year, especially at the time of an annual High School Conference held at the university. They show much interest in it and ply me with questions as to where they can get this or that material for their own work. As the University of Illinois with its five thousand students is located in a small town remote from the museums of any large city, it is evident that the university museums will not only be of use to certain instructors and students in connection with class work, but will be of general cultural value to the whole student body and to the community.

Almost every pleasant Sunday afternoon during the two hours and a half that the Museum of European Culture is open, it is visited by from a hundred and fifty to two hundred students and townspeople.

It is in fact the educational possibilities of this museum from various points of view, the recognition of the value of museum material for all departments concerned with European culture, the broad scope of the museum and the possibilities of development that the broad scope carries with it, that furnish me my excuse for calling to your attention this newly established and still small museum. Other large universities have gone much further than Illinois in the development of cultural museums but usually along less comprehensive lines, often along national lines, as in the Germanic and the Semitic museums of Harvard. There is an obvious educational advantage however in having all the material bearing upon European culture in one museum, thus making it possible to illustrate in their entirety great social and cultural movements or periods of culture common to the various countries of Europe. So far as I know, the University of Illinois is the only university that has undertaken to develop a museum of European culture, and I feel sure its future usefulness will demonstrate the wisdom of the undertaking.

I may say in conclusion that in summarizing the present contents of the museum I omitted mention, for the most part, of individual objects and the sources from which they were obtained. To any who may be interested I should be glad of course to give the information. On the other hand there are among those present many with wide museum experience who could give me valuable suggestions and furnish information and addresses that I may not have for obtaining further material suited to my purposes. I hope they will have the kindness to do so.

Mr. Edward K. Putnam (Davenport Academy of Sciences).—"Mr. President, I think the suggestion made by the author regarding the use of well selected and well made reproductions in small museums is of general interest. It is impossible for all small museums to have genuine collections. I realize that a large museum ought to confine itself to genuine things and would object to having reproductions, particularly if they are placed beside genuine things. Smaller museums, however, cannot get this genuine old material, but can produce an excellent effect by the use of reproductions, especially if they are supplemented occasionally by some genuine old material."

President Gilman.—"I think it very important that reproductions should be kept quite separate, so that there shall be no doubt in people's minds as to what is genuine and what is not. In my early experience in the Museum of Fine Arts in Boston, the first question asked about any object was 'Is it real?' It was very hard to dispossess a great many people of the idea that everything was imitation."

Mr. W. R. McCornack, architect of the Cleveland Board of Education, then presented information which he had compiled with regard to museum buildings recently erected. Following Mr. McCornack's discussion, the Association adjourned to the third floor of the Art Institute to see a collection of drawings illustrating the new museum buildings which Mr. McCornack had described. These drawings were subsequently referred to the archives of the Commission for Museum Cooperation.

Following Mr. McCornack's demonstration, the Association adjourned to attend a luncheon tendered by the Art Institute of Chicago to the American Association of Museums and the American Federation of Arts, jointly. At the conclusion of the luncheon, Mr. Charles L. Hutchinson, president of the Art Institute, called upon the presidents of the two organizations for remarks.

President Gilman.—"There has been much discussion during the past year regarding the relationship between the Federation and the Association, and both organizations have appointed committees to deal with the subject. In my own mind it has just become clear what this relationship is. The Association and the Federation are second cousins. Those whose blood is all the same are brothers and sisters; those whose blood is half the same are first cousins; those whose blood is a quarter the same are second cousins. Now the blood of the Association is a quarter the same as that of the Federation, for the Association represents four constituencies: art museums, science museums, historical museums and other museums. Likewise the Federation represents four constituencies: art museums, art commissions, artists, and other art lovers whether individual or joined in clubs. Since art museums constitute the quarter field which they have in common, since the Association is the older, and since the Federation was founded expressly to promote art without duplication of effort, it would seem as if the Federation was bound to turn over to the Association the promotion of art through the work of museums, retaining for itself only the promotion of art in other ways. Yet theoretical principles cannot be so simply applied in this world.

Facts are more complex. It turns out on examination that museums of art have in strictness nothing whatever to do with the promotion of art at all. In its essential character a museum may be defined as an institution founded to gather things for the purpose of allowing them to get out of date. On the other hand, in its essential character the promotion of art has to do with things up to date. So here are the two organizations back to back in the field of fine art, one with its face toward the past, the other with its face toward the future. But once more we find it necessary to adjust our theory in order to bring it into accord with fact. For while in essence museums are devoted to remains of the past, we find them all about us in America concerned with current art production. They buy contemporary work, they organize exhibitions of it, and offer prizes for it. It is true the longer they exist and the more their permanent collections grow the more predominant will become their interest in the past. But meanwhile they are concerned largely and sometimes even chiefly with the present; and in so far our museums, like the Federation, are devoted to the promotion of art. In this side of their work they find the Federation already active through the organization of traveling loan exhibits. Shall they now ask the Federation to turn this promising effort over to the Association on the ground that the organization of exhibits is a museum activity and therefore belongs within the sphere of the Association, whose machinery the Federation has in its constitution renounced the right to duplicate? The answer is another question. Have museums through their Association ever engaged in organizing such cooperative exhibitions? No. Then where was the duplication? There was none.

"The view taken by the Association of its relation with the Federation will be this: the Federation will not undertake to promote art through the work of museums by any method already in use by the Association, for this would involve the duplication its own constitution forbids; but if it does so in any other way, we of the Association will bid the new method godspeed and wish we had thought of it first."

President Robert W. deForest responded on behalf of the American Federation of Arts, expressing his hearty acceptance of the relationship which President Gilman had proposed, and his confidence that the two organizations would work together in harmony and mutual helpfulness.

After the luncheon the members of the Association were conveyed through the park system to the Field Museum of Natural History in automobiles provided by friends of the Museum.

SESSION OF THURSDAY, MAY 21

Evening

The evening session was called to order by President Gilman at 8 o'clock in the Art Institute of Chicago. Members of the American Federation of Arts were especially invited to participate in this session.

President Gilman.—"It is a pleasure to welcome to this session the members of the American Federation of Arts. I see before me several members of the Federation who are also members of the Association, and this fact illustrates how closely the two organizations are allied in purpose. I said at the luncheon that they were second cousins. The meetings of the Association are concerned primarily with the methods employed in the development of large permanent collections, and to this extent they have a more narrow interest than the general discussions of the development of art which characterize the meetings of the Federation; but we hope that you will be interested in the more intimate discussions which make up our subject matter.

"I hope and we all hope that this meeting under the same roof with the Federation will be the first of a series, even if it is not a regular series, of meetings which we shall find it to our mutual interest to hold together. I am sure that we shall get a great deal of stimulus and satisfaction from this closer connection. I merely wish to extend on behalf of the Association a very cordial welcome to the members of the Federation.

"The first paper on our program relates to the possible function of museums in the very matter in which the Federation is primarily interested—the promotion of fine arts. I am very sorry indeed to have to tell you that Mr. French does not feel well enough this evening to give the paper in person."

Miss Bessie Bennett then read the following paper by Mr. Wm. M. R. French, director of the Art Institute of Chicago:

THE B. F. FERGUSON SCULPTURE FUND IN CHICAGO

The great fund for the erection of public monuments in Chicago, established by the bequest of B. F. Ferguson, is naturally a subject of general interest. The object of this paper is to give precise information with regard to it.

Benjamin Franklin Ferguson, an old and respected business man of Chicago, died April 10, 1905. By his will, after providing certain small bequests to relatives, he committed to the Northern Trust Company, a corporation existing by virtue of the laws of the State of Illinois, all his estate, real, personal, and mixed, in trust, for certain uses and purposes described as follows:

The trustee is to reduce all of the estate (except a certain piece of real estate bequeathed to a relative) to first-class mortgages and bonds. If the estate falls below one million dollars, the income is to be accumulated to that amount; provided that certain annuities to relatives and cemetery associations (amounting to $7300 annually) shall in any case be regularly paid. Four other annuities of $1000 each to public institutions, one of them the Art Institute, are provided when the estate reaches one million dollars.

The trustee, after accumulating the estate to one million dollars and setting aside the above annuities and the trustee's compensation, not exceeding one-half of one per cent, shall pay the entire net income annually or oftener "to the Art Institute of Chicago, to be known as the B. F. Ferguson Fund, and entirely and exclusively expended by it under the direction of its board of trustees in the erection and maintenance of enduring statuary and monuments, in the whole or in part of stone, granite, or bronze, in the parks, along the boulevards or in other public places, within the city of Chicago, Illinois, commemorating worthy men or women of America or important events of American history. The plans or designs for such statuary or monuments and the location of the same shall be determined by the board of trustees of such Institute."

An outline of the history of a man who established such a fund for public uses will be interesting.

Benjamin Franklin Ferguson was born at Columbia, Pa., in 1839, and was educated in the public schools there, finishing with a course in the Millersville Normal School. At the age of seventeen he went into his father's lumber yard at Columbia, and continued there three years, when he went to New York and was engaged for a time in an auctioneering business with Robinson, Scott & Co. In 1861 he joined the Union army, and was stationed at Alexandria, Va., in charge of the hay department of that section. It does not appear that he was an enlisted soldier: he may have been connected with the Quartermaster's department. In 1865 he came to Chicago, and again engaged in the lumber business, in the employ of the late Jesse Spaulding. Later he became the Chicago manager of R. Schulenberg of St. Louis in a similar business. In 1867 he went into business for himself, and was connected successively with the firms of E. Little & Co., Ferguson & Auten, and the South Branch Lumber Company. In this last company Mr. Ferguson was associated with Jacob and Francis Beidler, and the business, with large yards at Chicago and at Tonawanda, N. Y., became very flourishing and extensive. Mr. Ferguson extended his activities to the southern part of the country, and was president of the Santee River Cypress Lumber Company in South Carolina. He was a plain business man, self-reliant, and especially distinguished for his skill in buying.

In 1866 he was married to Myra Finney of Cedar River, Mich., who died about 1898. There were no children of the marriage.

During the last ten or twelve years of his life, from about 1893, Mr. Ferguson partly withdrew himself from the cares of business, and sought recreation in travel in the United States and abroad. He had a cottage at Buzzard's Bay, Mass., near Wareham, and it is said that he spent there his happiest days, cruising on the bay, reading in his library, or walking with his dogs. He was a contributor in a quiet way to the charities of Chicago, and he was a subscriber to the statue of Washington which stands at the Grand Boulevard entrance to Washington Park. He died in Chicago April 10, 1905. Mr. Ferguson's immediate relatives were few. He had no children. One brother, Warren F. Ferguson of Bordentown, N. J.; one half-brother, Thomas C. Ferguson of Chicago; two nieces, Miss Mary J. Ferguson of Bordentown, N. J., and Miss Mabelle M. Ferguson of Chicago; and one nephew, William G. Ferguson, of Columbia, Pa. alone survived him. Mr. W. F. Ferguson and Mr. T. C. Ferguson have both died. Miss Mabelle M. Ferguson has become Mrs. Frank H. Manley.

It is said that in his travels in Europe Mr. Ferguson was impressed with the decoration of the foreign cities with statues and monuments, and upon his return to Chicago was impressed with the destitution of such things.

The trust fund in the hands of the Northern Trust Company now amounts to nearly $1,100,000. The trustees of the Art Institute are by the will the trustees of the income of this fund. There are material reductions in the amount of the income by reason of charges for annuities, taxes, and cost of administration, and the annual income available for sculpture is somewhat less than $30,000. It may be remarked that if the fund had been left directly to the Art Institute with instructions as to its use, much of the cost of administration and probably the whole of the taxes might have been saved, a total of about $15,000 a year.

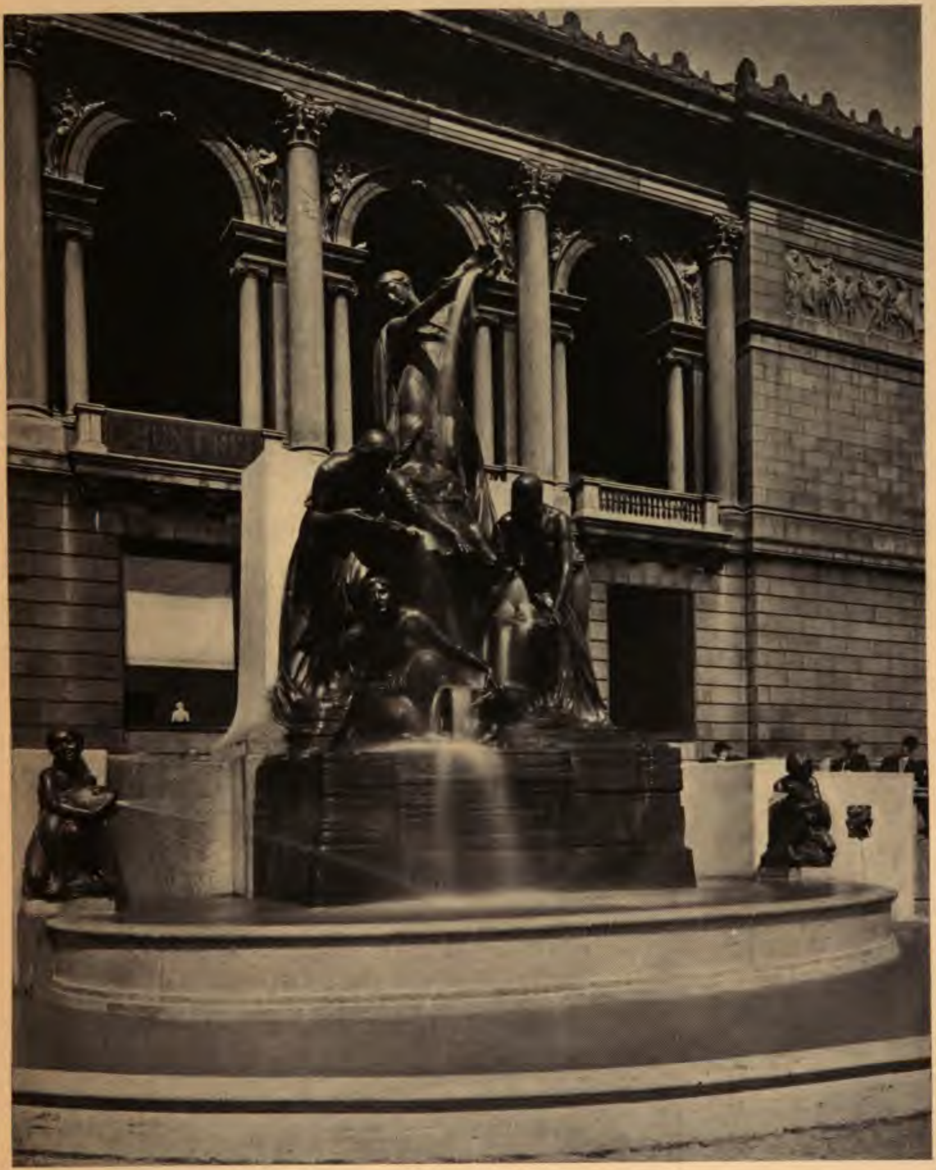
The only completed monument thus far erected is the Ferguson Fountain of the Great Lakes, south of the Art Institute.

A monument commemorative of the admission of Illinois to the Union in 1818, by Henry Bacon, to be erected on the West Side, is under consideration.

Mr. Lorado Taft has been commissioned to prepare full-sized models of his proposed Fountain of Time to be erected upon the Midway. Mr. Taft has been authorized at a fixed price to model the fountain in plaster, ready to be cut in marble, the preparatory models to be completed within five years. There is an accumulation of the fund now in the hands of the trustees, more than sufficient for all obligations incurred. The trustees, therefore, are not precluded from undertaking other works during the coming years.

The dedication of the Ferguson Fountain took place on Tuesday, September 9, 1913, at 4 o'clock in the afternoon. The day was beautiful. A thousand chairs were set in the open air south of the Art Institute facing the fountain, and a low platform was provided for the speakers. An audience made up of trustees and members of the Art Institute, friends of Mr. Ferguson and of the sculptor, and other interested spectators, overflowed the seats, and presented, with the moving throngs on Michigan Avenue and the crowded windows of the neighboring buildings, a lively and inspiring spectacle.

An address was made by Mr. Taft, the sculptor; a speech of presentation was made by Mr. Hutchinson, the president of the Art Institute and of the Ferguson Fund; a speech of acceptance was made by Hon. John Barton Payne, president of the South Park Commissioners; and the water was introduced into the fountain. It may be said parenthetically that this fountain plays every day except in freezing weather. In his address Mr. Taft said that the personification of the Great Lakes in sculpture was suggested by D. H. Burnham, the architect. The motif of the group, he pointed out, is not profound. He had sometimes thought it too obvious. "Lake Superior" on high and "Lake Michigan" at the side both empty into the basin of "Lake Huron," who sends the waters on to "Lake Erie" whence "Lake Ontario" receives them. As they escape from her basin and hasten into the unknown, she reaches wistfully after them as though questioning whether she has been neglectful of her charge. Mr. Hutchinson called attention to the appropriateness of this subject as a memorial of Mr. Ferguson,



FERGUSON FOUNTAIN OF THE GREAT LAKES

since the great lakes were the scene of much of his business activity. Judge Payne pointed out the necessity of material prosperity among citizens like Mr. Ferguson as the basis of great works of art. At the pressure of a button by the little daughter of the sculptor, the water flowed in the fountain, pouring from shell to shell held by the hands of the young female draped figures representing the lakes. On the great granite block back of the group is a bas-relief of Mr. Ferguson in bronze between two bronze panels of laurel branches, and the following inscription:

"Benjamin Franklin Ferguson bequeathed in trust to the Trustees of the Art Institute of Chicago a fund of one million dollars to be known as the B. F. Ferguson Monument Fund. The income derived from the fund must be used for the erection and maintenance of enduring statuary and monuments in the parks along the boulevards or in other public places within the city of Chicago commemorating worthy men or women of America or important events of her history. Anno Domini MCMXIII."

What this munificent fund will do for Chicago in the course of years it is difficult to conceive.

In the ensuing discussion the fact was brought out that Mr. Ferguson's example has been followed in Philadelphia by the creation of the Samuels' fund amounting to $500,000 for the sculptural decoration of Fairmount Park.

Mr. Edward L. Burchard, director of the Social Museum of the Chicago School of Civics and Philanthropy, then presented the following paper:

CIVIC AND SOCIAL MUSEUMS AND EXHIBITS

What is a civic museum and its class of objects?

A short time ago a personally conducted group of boys from the Robert Burns grade school civic club in Chicago looked with me from the top of the lofty Masonic Temple down over the city of Chicago.

From horizon to horizon we saw the clear blue lake, bending from southeast to the heart of North Chicago, the source of this city's cool atmosphere and cleansing winds. We saw below us the portage of great explorers, the Chicago River, passing from its mouth past the site of old Fort Dearborn and then between lines of warehouses on its banks to the branches that form the "Y" of Chicago's symbol. We saw reaching far out into a pall of smoke the great radial avenues that once were plank roads, the former paths to Green Bay, to the Galena lead mines, to the early French out-posts on the Mississippi, and to old Vincennes, on the older national highways to the Atlantic.

Upon these diverging spokes lay before us a great rigid gridiron of streets squared by compass, those underneath us congested with human overflow. Farther on shuttles on wheels darted back and forth distributing the city's material and human burden. We saw enormous monsters rising from the darkening chasms of the deep about us and towering skyward, some occupied with a small city of people and representing enormous wealth, even to a single taxer. And then again structures that stepped down on less and less costly land from warehouses to factories, from mansions to distant humble dwellings. At the hub we saw the Federal Building and dome, that reproduction of Architect Hunt's beautiful conception at the World's Fair—here a symbol of government.

Now here was a civic exhibit; civic museum specimen number 1 in its interest to those boys. They had studied facsimiles of these real scenes in diagrams and pictures as well as in idealized sections reproduced in the manual of the Chicago plan furnished them as a textbook by the City Plan Commission. They had been making surveys of their own local civic activities and exhibits for their school walls of their own school district portion of this great metropolis.

This real Chicago laid out before them was the ideal illustrative civic object, but unfortunately there are some recognizable limitations in bringing 7000 teachers and 316,000 children to the top of a skyscraper or even in taking them all out in "seeing Chicago" automobiles. There are difficulties in bringing even a miniature city panorama within the walls of 300 school buildings.

Wide geographic distribution in civic 'Nature.' Passing now from the magnitude of the material with which the civic museum must deal to questions of geographic distribution, what about civic museum specimens number 2, 3, 4, etc.—St. Louis, Cleveland, San Francisco, New York, London, Berlin, and a host of other shining bodies in the civic heavens?

I remember once watching on the platform of a Grand Trunk railway train two young Englishmen evidently recently landed in Quebec, and going, as so many others do, around Lake Michigan to reach the Northwest, as they stood on the lower step of the car observing one prettily lawned, forested and planned Indiana town after another pass before them. I was greatly interested in their intelligent remarks noting the similarity to the small provincial towns of central France, towns that I suppose they had some time visited on perhaps one of those many tours to the Continent for artisans and clerks that the English and especially the London Polytechnic have so well developed into a system.

When everybody in America goes traveling like this, comparing one town with another, we can have city plans and fashions rolled before us. Who would not like to observe often in this delightful way the charm of Dresden and Munich, the comfort of the Rhine cities, and the domestic beauty of the English villages? On the present per capita distribution of wealth, however, it is apparent that a civic museum must serve the mass of the people as the agency to acquaint them with the comparative facts of city building.

Complexity of the subjects dealt with. Aside now from the unwieldy size and the wide distribution of cities—the natural raw civic materials—there are the great complexities of the city's circulatory system, of the alimentary and respiratory tracts, hid beneath the street surface integuments and building lines, requiring skill to dissect and perhaps greater skill to display. No glance from the housetops, but only study, analysis, classification, comparison of a vast array of statistical fact, and graphic presentation will unfold this intricate knowledge to the civic student.

Were one to picture the various parts of a well-organized civic museum, one would see different halls with master labels, such as these: (1) site and history, (2) finance and taxation, (3) public safety, (4) transportation, (5) public works, (6) public welfare, (7) city planning and ideals. Of such is the civic museum, and the social museum is like unto it, except that the section 'public welfare' would be expanded into sub-sections such, for example, as the following: (1) population and races, (2) economics; (3) housing and health, (4) education and recreation; (5) philanthropy and social welfare.

Vital interest a characteristic of the civic museum. Not merely does the civic museum deal with concrete realities of large size, widely separated in space and more complicated than our bodily organism. Our very lives depend upon successful adjustment with this social nexus in which we are imbedded, and the way in which for better or for worse the civic machinery, be it public or private, keeps our food clean, our water pure, our highways clear of city apaches, our homes immune from fire and from the filth of the street, our children in school free from contagion, our working conditions sanitary, our cravings for recreation and culture reasonably gratified.

It is for these reasons that the collections of a civic museum, if they are brought home in the right way, develop perhaps a keener sense of one's own personal possibilities and responsibilities than from viewing any other kind of museum collections.

The number of these museums and exhibitions increasing. Perhaps that is why such museums are on the increase, particularly those on specialized social or civic subjects. For example the excellent permanent museum of safety in the Charlottenburg suburb of Berlin, with its great array of machinery illustrating the danger parts and their protection, is the pattern of many safety museums all over Europe as well as of the Museum of Safety in New York.

Exhibits on hygiene and especially that best advertised of health subjects, tuberculosis, are becoming standard in connection with health congresses.

Housing exhibitions are regular outdoor affairs in England, with houses built in full size and in open competition. City clubs and housing conferences of this country have taken to indoor displays of both the sanitary and the artistic phases of the subject.

Industrial exhibitions are duly influencing legislation as did the Sweated Trades Exhibition of London which led to the creation of the familiar English minimum wage boards.

Child welfare exhibits beginning in New York City four years ago have now been held in the largest hall of many of the big cities and this movement has now actively begun in Europe.

City expositions—museums of civic progress—are held every year, recently in Düsseldorf and this year in Lyons, France. City planning exhibitions have been put on in the City Hall of Philadelphia, and in New York under the auspices of the Merchants Association and of the American City Bureau. Budget exhibits are held every year in New York on Broadway and are put on by the city government itself at an expense of $25,000 so that the citizen may know what the city is doing, may here inquire personally from the department chiefs how his money is spent and learn why he should cheerfully pay his taxes, and even dip down a little deeper into his pockets. Milwaukee, Cincinnati and other cities are adopting New York's example.

Indeed so broad and extensive has the field become that the Russell Sage Foundation has found it necessary to create a new Department of Surveys and Exhibits, under the direction of Shelby M. Harrison, formerly of the Pittsburg Survey and E. G. Routzahn, formerly of the Municipal Museum of Chicago, for the distinct purpose of standardizing the methods and forms of this work, while the American City Magazine has at a great expense established in New York City a bureau where such museum material can be commercially made and bought.

I would make this point in passing that these numerous exhibits are creating stocks of exhibit material that more and more call for discriminating deposit in permanent museum repositories where they can be continuously used.

Chicago's Municipal Museum. Here in Chicago where we have seen the Field Museum grow directly out of the World's Columbian Exposition, a group of leading public-spirited citizens some nine years ago decided to secure the exhibits on the City Street in the St. Louis Exposition as the basis for a municipal museum in Chicago.

In the company headed by Miss Jane Addams of Hull House, Mr. Hooker, civic secretary of the City Club, Mr. Alfred L. Baker, Mr. Hutchinson, president of the Art Institute, Mr. Vincent, now president of the University of Minnesota, Mr. Fisher, former secretary of the Interior, and Mrs. Emmons Blaine, a director of the Child Welfare Exhibit, and others organized this museum, which was soon most attractively installed in the upper halls of the Chicago Public Library and displayed the comparative aspects of city life drawn from a wide range of cities, German, French, English, and North and South American. I wish each one of you might see the very attractively published first report issued by its director, Mrs. L. A. Hamlin, in which the purpose of the museum was stated to be "A continuous exposition in city making, illustrated by the use of graphic methods, development of cities and the relation of the geographic, industrial and social forces involved in the making of them." There was an attendance at this museum of from four to five hundred people daily, and on special occasions from fifteen hundred to two thousand. Eleven exhibitions in city planning were given, 84 conferences were held, and 500 free illustrated addresses given through the public centers and newly-opened park field houses of Chicago.

Despite its splendid auspices and abundance of material, this museum lasted but a few brief years, although it would have doubtless increased in value and importance had not difficulties with regard to its location in the Chicago Public Library put an end to its existence. I should add here that no such difficulties would have been encountered under our present broad-minded librarian, Mr. Henry E. Legler, formerly of the Wisconsin State Library Commission who, since his coming to us, has established a very successful library civics room and aided in nearly every exhibit of a civic character in Chicago.

That museum attempted three functions: (1) the collection of research material for civic experts; (2) illustrations of the principles of city growth; (3) the propaganda display of idealistic conceptions towards which our city should develop—to borrow a word, futurism.

It is open to question whether that municipal museum, had it endured, could or should have continued to occupy more than one of these three fields, that is to say the second of those just mentioned, the attractive display of comparative information and of principles of civic growth.

As these three functions are more or less characteristic of museums in general, perhaps some discussion of their bearings, as suggested by this Chicago municipal museum, will be found generally applicable.

The central civic museum a synoptic museum. As museumists doubtless you have walked into the great central court of the South Kensington Natural History Museum, and been delighted to see a case of birds or other animals in their habitat, illustrating a particular heading, now protective coloring, or again natural selection. As you walk from one case to another the whole theme of evolution is unfolded in one easily grasped series before your very eyes. Supplied now with this synoptic clue, a key to the mysteries of nature, you turn with a living interest to the interpretation of the detailed collections in the other galleries.

It is a question whether a civic museum is not most efficient when it is just this sort of synthetic and synoptic exhibit, giving a general view in a short compass of all the field of city development. It may do this in plaster model, or in colored perspective, or in skeleton diagram, giving volumes of facts at a glance, explaining the glossary of congestion, city, town, and garden city planning, or telling by comparison whether your city's curves show shorter or longer in expense, commerce, dying babies, park areas, or cultural opportunities.

Relation of the civic museum to civic research. Like that central court of the South Kensington Museum in its relation to the other galleries, the civic museum should be only the vestibule to what we might call departmental advisory groups of experts whether or not independently located. Its own illuminating general exhibits should guide those interested to the exhibit activities of these groups and in return should receive the contributory service of the specialists in these groups exactly as the university with its general library and museum relates itself to its zoölogical laboratory at the seashore, its law school near the courts, its medical school near the hospitals, or its settlement in the congested city districts.

In this day of extreme specialization it would be somewhat presumptuous for even the largest civic museum to undertake the research function in the very comprehensive field covered by the city, and it seems to me needless, in view of the fact that there are geographic, historical, engineering, hygienic, and welfare societies actively at work in nearly every large city.

The social museum a specialized group of experts. The so-called social museums so numerous in other countries, as in Paris, Frankfort, Munich, Nüremberg, Stuttgart, Budapest, Brussels, Amsterdam, Milan, Barcelona, and Buenos Aires, show the progress in this department of the civic museum. One is surprised to find the social museum consisting chiefly of a group of expert social economists and jurists in a building of offices or class rooms and surrounded with adequate archives and occasionally some highly scientific exhibit materials, dealing almost entirely with questions of industry and labor. The Harvard University Social Museum, the best of its kind in this country, housed in the spacious rooms of a well endowed building, equipped with attractive museum furniture and well mounted museum material, with ample endowment for up-keep, is the working tool of the professorial staff of applied ethics who are experts in different divisions of their subjects.

Specialists in civic idealization. Another great group of experts, the architects, has been added only in the past few years to the civic museum constituency. I found such a group in every city hall of Germany that I visited summer before last. If I am not mistaken, one finds in all the principal cities of Germany and increasingly in the cities of England, a permanent body of city experts laying down a design for city structure fifty years in advance of occupation as well as shaping present tendencies of city growth to these ideal plans. It is to promote just such civic foresight in this country that experts like architects John Nolan of Cambridge and I. K. and A. B. Pond of

Chicago, and Delos F. Wilcox, franchise specialist of New York, George E. Hooker, civic secretary of the Chicago City Club, and others are developing city planning and other civic exhibits.

Forty architects were competing at the Chicago City Club a few months ago to create a thing of beauty out of one of Chicago's rigid square quarter sections that will place each house in a park and give each family its proper quota of breathing space, or again in competition as they are at present to plan an ideal civic center that will transform the neighborhood focus into a thing of beauty. Here we have producers of an entirely new class and a very high intellectual and artistic class of museum exhibits.

Relation of the civic museum to temporary exhibition. Things change! A few weeks ago when the Mexican crisis was at its height, one of our cartoonists pictured Father Time cranking up a handle and reeling off the film of history so fast that he positively looked punished.

This speed is accelerated by our idealists, not only artist and architect, but engineer, reformer, and statesman, who sanction much destruction of the old when they furnish the plans and specifications for the new, and the civic museumist must not be slow to follow suit.

When our School of Civics social museum acquired, by inheritance some years ago from the old Municipal Museum, a costly collection of vital statistics, maps of German health conditions, maps that we could not give away to either the city or national health agencies because the statistics were behind time, it took the breath away from the Chicago customs house officers because we asked permission to destroy material in bond with a high value when it first came to the St. Louis Exposition. We had to apply to the secretary of the treasury through a personal friend of his in Chicago to get such a strange state of affairs understood and accepted.

The central permanent civic museum of standard synoptic value can not hope to change its equipment and exhibit presentation as fast as these kaleidoscopic times require for the reasons of expense and bulk and return on the investment that Dr. Lucas of the American Museum of Natural History so forcefully brought out before the Association last year in his paper on the "Function of museums: the question of temporary exhibitions."

At the same time the permanent civic museum must recognize the existence of a great number of civic organizations for propaganda, at least 67 different varieties in the national field alone, and they have enthusiastic memberships and committees back of them eagerly using in many cases exhibitions or exhibits to disseminate their data and ideals.

Standardization of types of exhibition material. Even although the civic museum may not tie up its funds on surveys and exhibit campaigns, it must enter more or less into cooperative relations with propaganda organizations and help to organize or standardize their exhibits, for some day the civic museum becomes the residuary legatee of the civic exhibition.

The expensive relief models and casts found in the historical museum and the art gallery, are replaced in the temporary exhibition by displays of the store window type, by sceneries quickly and cheaply constructed from department store furnishings and by *tableaux vivants*, groups of children acting the ideas to be illustrated by way of the special demonstration, the festival and the dramatic pageant. All of these forms of exhibit are comparatively inexpensive, and suited to meet the temporary conditions of exhibit.

Then again for backgrounds the exhibition employs the graphic flat material, particularly photographs, poster designs, and commercial advertising signs, all of these peculiarly fitted because easily prepared and because effective from the advertising point of view.

If whatever in this temporary material is worthy of permanent display could be so designated in advance of manufacture, the civic museum would gain greatly of course in the stability and finish of this acquired material.

Traveling exhibitions and civic museum extension. Between the break-up of the exhibition and the deposit of its valuable material in the civic museum or of the remainder on the scrap heap, flourishes the traveling exhibition. I wish space permitted ample description of the numerous social and civic exhibits that have been circulating in the past few years both in the United States and Europe. I should describe for example the Child Welfare Exhibition movement originated by its present general secretary, Mr. C. F. Powlison, in New York four years ago, and the city welfare exhibits that have grown out of it in Chicago.

The development of civic institutes in connection with these exhibits in the different social centers and public schools of Chicago under the fostering care of the Woman's City Club Exhibit Committee and its chairmen, Mrs. W. I. Thomas, Mrs. W. F. Dummer, and Miss Louise Montgomery, have been exceedingly successful, in some instances attracting as high as 27,000 in one week at a single center. The addresses by city officials on health and public work of various kinds as well as the lantern slide and motion film entertainments have been stimulating, and real neighborhood civic revival has usually been the result.

One of the most interesting of rotary exhibits is the town-planning exhibit, prepared by Prof. Patrick Geddes, a leading economist of Edinburgh University and authority on city development, together with such leading city planners of England as Mr. Raymond Unwin and Mr. Thomas Addams, and circulated through English cities and more recently to the Continent. Mention should be made of the New York City Planning Exhibit, transformed by the American City Bureau into a rotary and now traveling across the country eastward from San Francisco.

Were one to look down upon a map of the United States, he would see not only individual traveling exhibits set up in one town after another, sometimes in Chatauqua tents, but cars and whole trains with health exhibits sent out under governmental administration making a tour of the state for the education of its citizens.

University extension welfare exhibits. The development of the university extension movement and the use of exhibits under the departments of general information and welfare of the state universities is amazing. Over 20 state universities have now organized such departments and through their great machinery and resources are reaching the remotest hamlets of the state.

The University of Minnesota, under the aggressive leadership of President Vincent, who is following in the footsteps of his illustrious father, Bishop Vincent, the founder of the Chatauqua movement, has actually organized professors from the university staff into traveling 'troupes' that visit during the summer a series of cities and towns in various parts of the state. These professors develop civic institutes, address women's clubs, meet commercial organizations at luncheon, have a farmers' day, and arrange other special programs for each day in the week.

They have used in this university campaign the traveling exhibit of the Chicago School of Civics on "What the Old World Has to Teach the New," an exhibit that has also gone the rounds, as has a companion exhibit on "American Contributions to Social Advance" to some 12 universities of the Middle West.

The civic museum as a teacher of exhibit making. The latest contribution of the civic museum is helping the people of a community to organize their own temporary exhibits. As the civic museum and civic exhibit are pictures of man engaged in civilizing himself through the medium of city life, and as these exhibits are tools by which he is able to more intelligently understand this creative process, then it follows that in a democracy where everyone shares in policy making, as many as possible should participate in civic exhibit-making.

I realize that this is a new dictum to museum men. All, however, who have worked as I more or less have in organizing civic exhibit committees must have been impressed with the great subjective value of these activities. Whether it be in surveying the ground for the exhibit, the selection of forceful themes, the crystalizing of floating and intangible material into concrete form, the making of that form psychologically telling to other minds—all this exhibit work makes the civic ideas clearer to these committees and arouses enthusiasm in their own propaganda.

The civic museumist is now able to join forces with the public school educator and with the neighborhood civic clubs or forums, which are springing up like mushrooms in Chicago in our public schools and other social centers.

In the past three or four months we have tried exhibit experiments with the eighth grade pupils in a Chicago public school that have satisfactorily proved to our minds that city club exhibit methods can also be efficiently carried on with the juvenile civic clubs. What this means in the creation of a new attitude of civic mind and of civic habit in the new voter will be appreciated when we realize that in Chicago 85 per cent of the grade school children go immediately from the eighth grade into industry and business. Unless these children who are to become voters within five or six years are caught young they add to the apathetic voters who are said to be the source of the larger part of bad city government in America.

Conclusion. As Mr. Ashley well said in his program for museum extension presented last year the newspapers cannot give the better information and ideals until systematic education creates the demand in the minds of the people.

I take it that the museum or exhibit administrator is a managing trustee conserving important stocks of knowledge in material form for the express purpose of systematically making that knowledge as useful as possible to every class of mind, be it genius or peasant.

To effect this educational end, I see each large museum a central reserve bank highly organized, especially in its relations to collectors and to the research expert as well as to its branch banks. At the school house I see us some day all come together under one roof, the school teacher from the board of education, Dr. Wilson's commerce and geography cabinets and his special lecturers, Dr. Lucas' or Mr. Simms' or Mr. Baker's natural history trays, Mr. French's and Mr. Carpenter's loan collections of art displayed in one of those Indiana specially constructed school art galleries, and the civic exhibit man showing the young mind how to interpret its own neighborhood by its own home-made civic exhibits. I believe our democracy will eventually be satisfied with nothing less than this school house-museum ideal.

President Gilman.—"Are there any remarks on this very interesting paper? I suppose that to the outside world a museum and its management is about the most deadly dull subject one could mention. A museum is supposed to be a place where things are put to stay put and that is all there is to it, but I am sure that those who have listened to the papers presented during these three days will all go home with a new sense of the immense productivity of the single idea of the object.

"I think Mr. Burchard's last suggestion is one of the most fruitful. It never occurred to me before that children could be made to turn themselves into collectors, into actual creators of museums, that they themselves could make their little collections, be museum officials, and learn in the process of collecting to do it in an active and practical way. This is to me a new illustration of the immense productivity of the ideas which our Association is engaged in propagating and developing."

Treasurer Wilson.—"Mr. President, I am much interested in what Mr. Burchard said about his work with the eighth grade children, and I would like to ask him to describe this work a little more fully if he does not object."

Mr. Burchard.—"About a year ago, the district supervisor, Miss Kellogg, became much interested in getting material from the Women's City Club and some other organizations to put in the schools. Through her some of the teachers and children became interested in this subject. One or two of the teachers came to the School of Civics and took a course in municipal government; then went back and organized the sixth, seventh, and eighth grades into a city. Each of the rooms represented a precinct, the whole school represented a ward. They held elections and elected their own officers; they appointed boys to take charge of the several districts and of the different blocks in each district. These boys went about looking at vacant lots, cleaning them up if they needed it, and making the adults so ashamed that they got out and helped them clean up. They also looked after the trees and got the city forester interested so that he came down and lectured to them about the trees. These boys are mostly Bohemians and Germans, with a few Irish, a fine type to work with, and much more promising than the Italians and other southern races. You will find that these boys have a pride in their districts. I took them to the City Hall and through the map department, the water department, the sewer department, the mayor's office, and the council chamber, in order that they might realize what the central functions of government are. A priest in that district told me that it was the ignorance of the citizens that made them apathetic, because they felt so hopeless. It is absolutely necessary to establish the connection between the citizen and his government, and that is the reason for beginning with the child in his immediate environment, beginning by teaching him his own neighborhood and expanding from that to the ward and from the ward to the whole city, rather than beginning with the constitutions of the United States and of the State of Illinois."

Treasurer Wilson.—"I cannot conceive of any school or other organization in a city that would so take the foreign children as they grow up into the real activity of the city as this work Mr. Burchard is doing."

President Gilman.—"I think the varied scope of the museum idea is shown by our program. From a description of the educational possibilities given by a city through its museum, we passed to the influence of a civic museum upon the rising generation. Now in our third paper we go out of doors to an entirely different development of the same museum idea."

Mr. Edward K. Putnam, acting director of the Davenport Academy of Sciences, then presented the following paper:

SKANSEN AND THE OUTDOOR MUSEUMS OF EUROPE

A living museum—one out in the fresh air, in beautiful natural surroundings, with real houses and people, and music—this is what the people of Stockholm enjoy in the outdoor museum of Skansen. It is in absolute contrast with the old idea of a museum as a dingy building filled with dingy specimens in charge of a dingy curator. It is an interesting illustration of the manner in which museums all over the world, in one way or another, are being brought closer to the people.

The idea of the outdoor museum originated with Artur Hazelius (1833–1901), who as early as 1872 began collecting material for a museum that would illustrate the life of the people of Sweden and the North. He started in a small way but with a large plan, and as he had enthusiasm as well as foresight he was able to carry out his ideas. As a result Sweden now possesses in the Northern Museum (Nordiska Museet) a noteworthy institution with its new large handsome museum building in Djurgården and with its unique outdoor section known as Skansen. The Northern Museum receives state aid but has its own organization and its own board of directors. The new museum building was opened in 1907, but the outdoor department was opened in 1891 and proved a source of unusual interest to the visitors to the Stockholm exposition of 1897.

Skansen, while an organic department of the Northern Museum, is in itself a comprehensive "living illustration of the culture-history of Sweden." It is located on high ground, rocky and wooded, with lovely views of Stockholm and its surroundings of water and land. As the visitor enters the gates he soon realizes that he is at once being carried out into the country and back to the old times. Around him are peasant cottages, either moved from their original locations or built on lines of actual houses. There are also barns and sheds, windmills, and interesting detached belfries of the old northern churches. As he looks into the cottages he finds the actual furniture, the hangings and the utensils such as thousands of peasants have used and still use. He passes rune stones, mile stones, and boundary stones. He sees quaint carts and wagons, and even a long church-boat from Leksand. He comes upon a settlement of Lapps with their variety of huts. He sees peasants about the cottages dressed in their gay-colored old costumes. If it is toward six o'clock the music of the fiddle will attract him to the dancing place where he will see young men and women in costume dance the old folk dances, or children the ring-games and song-dances. He will hear on a long horn the calling home of the cattle. He will enter one of the cottages and hear Brita tell the old stories, or listen to an old fiddler or ballad singer. He will follow the crowd out to the open-air theater on a natural slope with real trees and cottages for scenery. Here in the long lingering twilight he will be carried away by the simple acting of Värmlandingarne or he will imagine himself back in Gustaf Vasa's time when he witnesses Englebrekt Englebrektsson. When he returns to Stockholm along the Strandvägen or by one of the quick little ferries he feels that he has had an insight into the real old life of the North. This has not been in the four-cornered cases of a museum, but out in the open, in surroundings that give the whole scene what the Scandinavians call *stämning*, a word only partly translated by our 'atmosphere.'

No one seems to be satisfied with a single visit to Skansen. Foreign tourists, Swedes from other parts of the country, even Stockholm people themselves go time and time again. There is always much that is new. From time to time there are historic processions with those taking part properly costumed and equipped. Then there is the celebration of the folk festivals of the year, Whitsunday, Midsummer, Yule and many more. At Skansen folk lore is alive.

Another division of Skansen is devoted to the animals of the North, here too the effort being to show them in as near their natural surroundings as possible. This is much like a 'zoo' except that the animals are all from a single portion of the globe. An effort is also made to show the trees and flowers of the North. Skansen, as well as the Northern Museum, is consistent in limiting its field to the North. Its motto is "Känn dig själf" (know thyself), and one of the results sought and obtained is an increased interest in the homeland, a more sympathetic patriotism.

While Skansen at Stockholm is the largest of the outdoor folk museums, such institutions are found in the other Scandinavian capitals: the Norsk Folkemuseum at Bygdö, Christiania and the Dansk Folkemuseum at Lyngby, Copenhagen. Outdoor museums are also found at Helsingfors, Finland; at Lillehammer, Norway; and at Lund, Sweden, the latter being a 'little Skansen.'

The idea of the outdoor museum is spreading through Europe and such institutions either have been or will be established in Holland, Germany, and elsewhere. In England an organized effort is now being made for the creation of such a museum, one of the schemes being to utilize the old Crystal Palace grounds at London. With Scotland, Ireland, and Wales to draw on, to say nothing of the colonies, such an institution should find no lack of material to make it an influential folk museum.

Whether an outdoor folk museum of this type would be as practical and successful in the United States as in Europe is a question. But in any case there are ideas which should prove suggestive to museums that aim to keep in touch with life.

In the absence of the author, the following paper by Mr. FitzRoy Carrington, curator of prints in the Museum of Fine Arts in Boston, was read by title:

THE DEVELOPMENT OF A PRINT DEPARTMENT

In a happy moment, when enthusiasm had outrun discretion, I promised to say a few words to the Association regarding the development of a print department. I should have remembered that development can only follow foundation, and that a print department, of necessity, cannot be developed at a greater rate of speed than the museum of which it forms a part. In substantially all eastern cities museums have not arisen in response to any wide-spread public demand, but have been superimposed upon the community by a small body of enthusiasts who chanced to be art lovers in a position to gratify their tastes, and who were desirous of sharing their possessions with their fellow-citizens. We, therefore, are thrown back upon a question too big to be adequately treated by me at all, and certainly too important to be handled within the limits of a paper as brief as this.

Prints, of their nature, appeal to an intelligent and therefore limited public. They cannot cater to the popular clamor for color or offer the compelling argument of size; consequently, a department of prints is likely to be the last created and maintained in any museum. It is essential, therefore, that it be started along the right lines and that, from the beginning, it should win the cooperation of those best able to further its development. Such print departments as exist, and they are all too few, have come about in a haphazard way. They have lacked a definite plan and consequently their growth has been spasmodic, and in many cases prematurely arrested.

I would suggest that in the beginning all print departments equip themselves with material which shall show the technical processes of etching, engraving, mezzotint, wood-cut, wood-engraving, lithography, etc. We have found, at the Museum of Fine Arts, that our "technical case," containing the tools used, the copper plates from which etchings, engravings, etc., have been printed, the lithographic stone, the wood-blocks and prints therefrom, are a constant source of interest to visitors. Practical demonstration is given, from time to time, of the making of prints (etching, dry-point, wood-cutting, etc.) and the student is taught not only how prints are made, but what are the qualities to be sought for in fine prints. It is well to have on view several examples of each process, showing how a different handling of the medium will produce differing results. In etching, for instance, the depth of line secured by repeated bitings, and the various effects obtainable by wiping the plate clean, or by leaving in certain places a film of ink upon the surface; in lithography, the use of the pen, the crayon, the brush, the stump or rag, the scraper, etc. With the aid of such a technical collection, the beginner soon learns to differentiate between the various processes, whereas without such knowledge it is almost impossible for him to intelligently study the prints contained in the museum collection. We should place first, therefore, on the list of desiderata a small collection showing the technical processes. A print-department-to-be might aim to secure next a representative group of the works of nineteenth century etchers. Such a collection need not be large to start with, nor necessarily costly, though of course, the master-works of the master-etchers command each year increasingly high prices.

Seeing that we are considering the establishment of print departments at a moderate cost (they will grow fast enough later on, when they shall have demonstrated their utility and the aesthetic enjoyment to be derived from a study of their treasures) it would be well to mention here, as third in the order of desiderata, a representative collection of facsimiles of works by the earlier engravers and etchers, and of reproductions of drawings by the great masters. Fortunately, these are easily obtained, of excellent quality, and are relatively inexpensive.

There is a wide-spread prejudice, not wholly without reason, against reproductions in any collection, though in substantially every museum that most chilling of all reproductions, the plaster cast, is plentifully represented; but unless we call to our aid the reproductive arts, how can any print collection in any American museum, save by a series of miracles in the way of gifts or bequests, hope to show in the near future any adequate representation of the work of the early

Italian and German engravers, for instance, many of whose prints are forever held in the all too safe keeping of the great European museums. In the case of original drawings, reproductions are the only alternative.

A young department must rely, in part at least, upon the cooperation and generosity of its friends. It is of prime importance that there should be set aside annually a definite, stated sum, no matter how small, for the purchase of prints. One of the first questions put to a curator by the interested visitor is, "What fund have you for the purchase of prints?" In nearly every case the answer has been, "We have no fund for the purchase of prints." True sympathy speaks from the pocket-book. That which costs nothing is accounted to be of little worth. Look over the treasurer's report of substantially any American museum which is wise enough or fortunate enough, to have a print department. You will find that the appropriation for prints is at the extreme end; or is invisible! It has been our privilege to lay out a plan for several small collections for sister institutions, during the past twelve months, and in every case pleasure and surprise have been expressed that for so small an outlay so many and so interesting prints by masters of such importance could be secured. A skeleton list of prints of this character might well form the point of departure for a budding print department. It might be arranged along the lines of the A. L. A. model libraries, calling for an expenditure of $500 or $1000, or as much more as the generosity and enthusiasm of the friends of the department would warrant.

It has been proved time and time again by experience that the start, the plan, is more than half the battle. A print collection, no matter how small, once commenced, draws to itself a constant and constantly increasing stream of gifts and bequests. I might instance the collection of the Museum of Fine Arts, which now numbers over 70,000 prints. The first entry in the print register is a gift of *one* print in 1872. This constituted the entire collection until 1874, when the bequest of Charles Sumner swelled the number to eighty-five prints. Our accessions by gift, bequest, or transfer during the year 1913 numbered 2912. This statement is not made in any spirit of boastfulness, but merely as a contribution to history.

It is suggested, therefore, that the development of a print department proceed along the following lines: Let a few art lovers get together and determine the character and the aim of the print-department-to-be. As a foundation, there should be a small and carefully chosen collection, showing the technical processes of engraving, etching, lithography, etc., together with the tools used in the production of the various prints. Next should come a representative group of prints by the master-etchers of the nineteenth century. Its size would depend, of course, upon the funds available and the generosity of friends interested in the project. It is safe to prophesy that this portion of the collection would show the most rapid growth, and, from the start, meet with the quickest appreciation. Third in order should come a collection of reproductions. Though they may be an evil, they are, in the beginning, a necessary evil. Fortunately the American collector is not only enthusiastic and generous, he is phenomenally quick to learn, and a serious print department will not have long to wait before it is able to show, either by loan or gift, a certain number of fine prints by the earlier masters of engraving and etching. The development of any print department along the lines of old masters must necessarily be slow. Fine impressions have ever been rare and each year become harder to find. It is improbable that a print department will have, at the start, any fund available for purchase which would permit of the acquisition of many engravings by Schongauer, Dürer, or Mantegna, for instance; etchings by Rembrandt, Van Dyck, or the great masters of the seventeenth century; of the portrait engravings by Nanteuil, Drevet, or Edelinck; but here, as in many other relations in life, one may 'win by waiting.' The essential thing is to *get the print department started* and *have a good plan*. Our print department at the Museum of Fine Arts, Boston, is forty-two years old. Our growth at times has been very slow; at other times more rapid. We have made many experiments and the results are at the service of our fellow museums. We shall account it a privilege, as certainly it will be a pleasure, if those contemplating the establishment of a print department in any existing museum will permit us to share with them such knowledge as we have acquired by practical experience, and our plans for future development.

In the absence of the author, the following paper by Miss Margaret T. Jackson, assistant in the department of prints, Fogg Art Museum, Cambridge, was read by title:

CLEANING OF PLASTER CASTS

Few museums which have experimented with cleaning or preserving plaster casts have succeeded in finding a wholly satisfactory process. For the most part casts which have become too dirty for exhibition are treated in one of three ways: They are retired to some storeroom, or, if the museum be rich, they are painted to imitate marble or bronze, or thirdly, they are washed with cold water. All three of these methods should be avoided if possible, though the first is most to be recommended as not injuring the surface of the cast!

In certain rare instances successful experiments have been made with various kinds of solutions to be applied to the raw plaster when the cast is new which will make a waterproof coating that can easily be cleaned. In the Albertinum in Dresden, there is a laboratory for casting in plaster. Here they have developed the so-called starch process for the cleaning of casts. The receipt for this was given me two years ago by Herr Kuhnert, the head of the laboratory, and although I have asked many people about the process I have hitherto found no one who has used it.

During the alterations at the Fogg Museum this winter, two old casts were discovered in a peculiarly disgraceful condition. With the consent of the director, Mr. Forbes, we undertook to apply the starch process. The result was remarkably satisfactory. Before attempting to apply the starch paste the cast should be carefully examined to determine whether it has already been treated in any way or whether the plaster is still in the raw state. Casts which have never been treated or those which have been painted with water colors may easily be cleaned by the application of the starch paste. Great care should be taken that the paste is of the right consistency as otherwise the cast may receive some damage.

The receipt as given to me is as follows: In order to starch a life-size bust take about one pound of clean dry wheat starch and pour over it a scant pint of cold water. Stir until lumps are gone and the starch and water are thoroughly mixed. Place on the stove an agate-ware kettle which holds at least a gallon and put in it about two quarts of boiling water. Add to this the mixture of starch and water already made and stir constantly to avoid lumps. This should be allowed to cook until the paste becomes very thick. This hot paste must be spattered at once onto the cast by means of a large round bristle brush. The plaster must not be stroked with the brush, but the cast must be covered with an even coat of paste about one-half inch thick. If the paste is too thin it will run off, while if it is too thick it will not stick at all. A little experimenting will easily show what consistency is desirable. After about twelve hours, or at the latest the next morning if the starch is put on in the afternoon, the paste must be carefully pulled off with the fingers. In general the dirt will be taken off with the paste. Should dirt, however, stick to the cast anywhere, it will be loose and can easily be removed by a gentle wiping with a damp sponge which must be washed and squeezed out in fresh cold water. The starch must not remain on the cast longer than one day as otherwise it becomes too dry and in tearing off it takes the plaster too and thus injures the surface. The same result occurs if the layer of paste which sticks to the cast is too thin.

If large statues or groups are to be cleaned the starch must be prepared in larger quantities and the paste put on beginning at the top. The process must not be interrupted until the whole is covered.

The cost of the cleaning is very slight as the starch is cheap and any person of ordinary intelligence can be taught the care necessary to avoid injury. One experiment on some duplicate or broken cast should be enough to insure success in the future, especially if the first experiment is followed by another trial immediately.

Dr. Frederic A. Lucas, director of the American Museum of Natural History then read by title the following paper:

THE PREPARATION OF SKULLS AND SKELETONS FOR MUSEUM PURPOSES

Requests are so frequently received by the larger museums for information in regard to the best methods of cleaning skulls and skeletons that it seems well to publish a description of those processes that have been found most successful. The compiler is tempted to add that when practicable he still prefers the slow method of macerating in water at temperature of about 80° Fahrenheit.

SODA AND OAKITE PROCESSES

Many thousands of small skulls ranging in size from the small shrew to that of the woodchuck have been cleaned by the following simple process:—

Soak the skulls over night in a solution of salt and water; this softens the flesh and removes a great deal of the blood. Boil from one to three minutes, according to size and toughness in a solution of washing soda in the proportion of one-fourth to one teaspoonful to a quart of water, according to the size and toughness of the specimen and the amount of grease it contains. The skulls are to be dropped in the water *after* it has been raised to the boiling point, not put in and allowed to remain until the water has been brought to a boil. After boiling for the time noted, the vessel can be removed from the flame and the skulls allowed to remain in the water while it is cooling. If the skulls are small and tender they should be removed from the boiling water and put in cool water. Common sense and experience are very important ingredients in the preparation of skulls and in fact of all material, and a little of this must be used in order to make any process successful.

Dr. J. E. Benedict of the U. S. National Museum finds that a new cleanser, Oakite, may be used as a substitute for the soap process, a teaspoonful of Oakite being used in a half gallon or gallon of water.

SOAP PROCESS[1]

During the last few years the American Museum of Natural History has adopted two new methods for the preparation of small skeletons. In the first process, which was suggested by Prof. Dolley's "Methods Employed in the School of Biology of the University of Pennsylvania," the specimens are boiled in a solution of the following composition:

(I)

Water (H_2O)	2000 cc.
Ammonia (NH_4OH) concentrated	200 cc.
Saltpetre (KNO_3)	12 grams
Hard Soap	100 grams

The animal or part of the animal to be prepared is skinned, eviscerated, and put in a vessel containing one part of the soap solution (I) to three or four parts of water. The vessel is then placed over a water kettle or gas stove, and boiled for half an hour. The muscles and other parts will be found to have swelled up and gelatinized, feeling gummy to the touch, and being easily removed by means of a dull instrument. After removing the greater part of the muscles, a matter of a few moments, the specimen is boiled again for half an hour or less, when the rest may be removed by a soft brush or washed away by a gentle stream of water. The specimen is then placed in a solution of commercial hydrogen peroxide for bleaching, and, if necessary, in ether or benzene for the removal of fat. The perfectly white specimen is then arranged in the desired position, supported by strips of cardboard and pins and left to dry.

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[1] The description of this process is written by Mr. Adolph Elwyn, of the American Museum of Natural History in New York City.

This method, on account of its extremely quick action, has recently been used almost exclusively for the preparation of mammalian skulls and mammalian and reptilian skeletons.

As in any other method the time of boiling must be adapted to the nature of the specimen. Ten minutes of boiling is often sufficient for the preparation of small skulls, such as shrews, bats, and the smaller rodents, while some of the larger carnivore skulls have been kept in the solution almost two hours. The falling out of teeth, which is such a marked feature of maceration, is entirely done away with, as the periosteum seems to form a gelatinous paste which holds the teeth in place.

The process, in spite of the use of boiling, has yielded a number of excellent results. Perfect ligamentory skeletons of various reptiles, small mammals, and birds, have been prepared in a short time and with comparative ease. Some specimens were not even touched by an instrument, but cleaned with a gentle stream of water; yet not a rib was broken nor a bone lost.

Another advantage of this process is its action on preserved material. Alcoholic and even formalin specimens have made good preparations after prolonged treatment with soap solution.

ARTIFICIAL DIGESTION PROCESS[2]

The second method, which has been used most successfully in the preparation of fishes and amphibians, is one of artificial digestion by means of pepsin. As before, the animal is skinned, eviscerated, and the larger muscles cut off as far as practicable. It is then put in the following solution:

Water (H_2O)	500	cc.
Hydrochloric Acid (HCL) concentrated	1–1½	cc.
Pepsin	3	grams

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[2] The description of this process is written by Mr. Adolph Elwyn, of the American Museum of Natural History in New York City.

This solution is kept at a temperature of 38°–42°C. and should not be permitted to rise over 45°C. as the digestive power of pepsin is then lost. The object is left in the solution for one-half to three hours according to the size and nature of the specimen and the result desired. Since pepsin acts very slowly, if at all, on elastic tissue, the ligaments will remain quite strong, when the rest of the tissue is completely digested, or at least in such a state as to be easily stripped off from the bone with forceps. The latter has been found in practice to be even more convenient and safe. After all the tissue is removed, a rather delicate task if the animal is very small, it is put successively in a hydrogen peroxide solution and ether, for the removal of blood-discoloration and fat, and is then mounted as mentioned before.

As in the soap process, account must be taken of the objects, the more delicate ones requiring a smaller amount of pepsin and acid, and vice versa. It is advisable to detach the head with its delicate bones and appendicular structures, and to digest them separately. Especial care should also be given to the carpal and tarsal bones. By this process a series of amphibians and fishes has been prepared, ranging in size from the small European toad (*Bombinator*) to the large goose fish (*Lophius piscatorius*).

A very encouraging factor was the behavior of the process toward cartilage, for in practically no case has the latter been acted upon during the time necessary for the disintegration of the muscle. The problem of cartilage shrinking was partially solved by the repeated application of glycerine during the drying period. In this way successful preparations have been obtained of such delicate cartilaginous structures as the hyoid and branchial apparatus of *Siren* or the sternum of *Pipa*.

PHENOL AND AMMONIA PROCESS[1]

During the past three years the process here described has been subjected to continual test, and has been proved free from all the objections raised to maceration or to cooking in other solutions. It is impossible to eliminate all odor from dried or drying flesh, but the disagreeable stench from maceration tanks is avoided. The 'chalking' of bones is entirely eliminated; and, instead of the solution eating the flesh of the hands, it acts as a disinfectant and so prevents blood-poisoning. In fact, no objectionable results of any sort have been observed.

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[1] The description of this process is written by Mr. F. Harvey Holden, of the Museum of Vertebrate Zoology of the University of California.

The speed with which skulls and skeletons may be cleaned is another argument for its adoption. As high as forty skulls (*Sciurus*) have been completely cleaned in an hour, after the proper treatment, while twenty is an average rate.

Solution I

One part, by bulk, clean phenol, or carbolic acid (90% commercial)
Three parts clean ammonia (28% commercial)
Ten to fifty parts of water (varying according to freshness of material)
(Make up as needed for immediate use)

Solution II

5% to 3% solution of hydrogen peroxide (commercial)

To clean disarticulated skeletons. Taking a fresh carcass, leave the greater portion of the flesh on the bones. Do not remove any of the muscles from rabbits and smaller animals, but tear off the skin and remove the entrails. Condyles and processes are less likely to be broken after the meat has become tender. With foxes and larger animals it will be found advantageous to remove the large leg muscles and the strips of muscle along the back. But even in these cases the tongue and eyes should be left in place.

Place the skeleton in a sufficient amount of Solution I to completely cover, and stew (at almost the boiling point) until the meat is tender and can be detached from the bones readily. Boiling should be avoided, as the high temperature drives off the ammonia and phenol.

When the bones have been thoroughly cooked, pour off the first solution. Wash in clean water and place on the fire again to simmer. This will remove much of the dark color from the meat and bones. As soon as this is done, remove the roughest of the meat with a scraper and place in Solution II. In this, the bones should stew until those which do not contain grease are of a clean white color. They should now be brushed and gently scraped clean and placed in the sun to dry.

With small skeletons, such as rats, rabbits, and birds of all sizes, the bones can be placed in a fine-meshed strainer and a stream of water forced over them. This will generally leave the bones free from flesh, so that they may be picked up easily and placed in the drying trays.

Dry flesh requires less cooking than does fresh. If practicable, dry before cooking.

Sheep and deer skeletons are so easily cleaned by cooking in water alone that no other solution should be used.

To clean skulls. The individual age of skulls, as well as the genus, has much to do with the length of time to be stewed. The skull of an adult *Peromyscus* will not be injured by a process which would disarticulate the skull of a juvenile *Neotoma.* It is necessary, therefore, to place each genus in a group by itself; and, in one genus, the adults and juveniles into separate groups.

The next step should be the removal of the brains. This should have been done by the collector while the specimens were still fresh; but if it has been neglected, the skulls should be thoroughly soaked in water, and the brains carefully removed by using a scraper (such as is to be seen figured in Hornaday's "Taxidermy"). An "infant rectal" syringe is also of use. The nozzle of the latter should be filed down until it is the shape of a small, thin-walled tube so that it may be inserted in the foramen magnum. By holding the barrel of the syringe between the second and third fingers of the right hand, nozzle away from the palm, and the ring of the plunger over the thumb, one hand can operate the syringe while the other holds the skull under water. Care should be used in forcing the water into the brain-case that the bones are not wrenched apart. If the brain is thoroughly softened and broken up the greater part of it can be sucked out instead of being forced out. If this is done there is no danger of disarticulating the skull. If the brains are not removed beforehand they often expand upon cooking and force the brain-case apart along the sutures.

Each skull should have an indelibly inscribed tag attached, giving a number. Higgins' Eternal Ink on a heavy, waterproof paper, such as imitation parchment, has been used with success. Neither the paper nor the ink is affected by cooking in either of the solutions recommended. Each group of skulls should be placed in a separate, clean, granite-ware pot and covered with Solution I.

These should be cooked as directed for skeletons, trying several skulls at short intervals to observe the progress. As soon as done, wash in water; boil out the dark colored fluid; and cook in Solution II in the same manner as a skeleton. It is not necessary, however, to remove the larger muscles from the skulls before cooking in Solution II.

Using a bone scraper, a tooth brush (dampened to soften it), and the syringe, remove all clinging flesh. It will generally be found that the meat has become so softened that the syringe will suck it off quite readily.

Some experimenting may be found necessary in adopting this method, but it should not prove a difficult matter to master it.

This process has been employed in the Osteological Laboratory of the California Museum of Vertebrate Zoology, practically as here recorded, for the past three years. During this time many thousands of skulls and several hundred skeletons have been prepared, all with uniformly satisfactory result.

DRY SAND PROCESS[4]

At the editor's request, I herewith contribute a few notes on a macerating pit which I had constructed in 1894 in the yard of the Dublin Museum. The water tanks which had previously been in use for the preparation of skulls and skeletons gave such offence to the neighbors on account of their unsavory odors, that they had to be removed. Some members of the museum staff were by no means sorry for their removal, since the work among the water tanks, laden as they were with debris of animal remains, was certainly an unsavory task. I had often heard of skulls having been dug into the sand near the sea-shore for the purpose of macerating them, and decided to try the experiment of putting partly cleaned bones into sand for some time, so as to study the effect. This was so successful that I had a large box made of boards and sunk into the ground for the preparation of small skeletons. In 1894 the first macerating pit was built of brick. It was about twenty feet long, with a width of five feet, and built with one layer of bricks from about one foot below the surface of the soil to a height of four feet. The soil from this oblong-shaped structure was dug out to the depth of the bricks, that is to say one foot deep, and several cartloads of pure sea-sand were poured into the pit, so as to fill it within six inches of the top. Hence rain-water is able to percolate through the sand into the soil.

In this pit all the skeletons and skulls for the museum have been prepared for the past sixteen years. At first the sand was full of very minute white nematode worms, and I was under the impression that they were largely responsible for the work of removing the flesh from the bones. But they no longer seem to inhabit the pit. Bacteria no doubt almost wholly perform the work of maceration.

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[4] The description of this process is written by Dr. R. F. Scharff, and is reprinted from *The Museums Journal*, the organ of the Museums Association of Great Britain, vol. x, pp. 196–198.

After removal from the sand-pit, the bones are carefully washed and bleached with chloride of lime or peroxide of hydrogen.

Otherwise there is no trouble, and no smell whatsoever emanates from the pit or the sand that is taken out of it. This dry system is therefore in every way preferable to the old arrangement of water tanks. The only difficulties of the dry system are to ascertain the length of time the skulls or skeletons should remain in the sand, and to find the objects when they are required to be taken out. Nearly one hundred skulls and one hundred and fifty skeletons of all sizes have been macerated in this pit. Sometimes when the bodies are very putrid they are put in as they are, skin and all. As a rule, the skin is roughly removed and the body thoroughly soaked in water. I find that skulls and skeletons are sufficiently macerated in about ten months on an average. Even skin and hair entirely disappear in about eighteen months. If left longer, the substance of the bone is apt to become light and porous, and finally to crumble away.

For the purpose of identifying the objects in the pit, I use old cigar boxes, packing cases, or any kind of box I happen to find. Holes are bored in the bottom, the lid is removed, and the box or case is filled with sand after placing the skull or skeleton in it. A tin label bearing some particular mark and number corresponding to that noted in the macerating-pit register is fixed to the box. A chart is kept in the attendant's room, on which the area of the pit and its contents are clearly indicated. By these means I can inform myself at once as to the position, *i.e.*, exact spot and depth of soil, of any box, and its removal on any particular date is thus facilitated.

At the conclusion of Dr. Scharff's paper, Dr. Bather said that a pit of this kind had been in use at the British Museum of Natural History for a little over a year, and appeared to be quite satisfactory. Even in the hot sun one could sit by it without feeling any ill effects. The position of the specimens in the pit was determined by attaching to them a long galvanized-iron wire, to the projecting end of which was fixed a zinc label with a number stamped on it. It was advisable that the subsoil should be porous, and not clayey, so that the rain-water might drain away. All the bones should, of course, be kept covered. There need be no limits to the size of the pit; a small box would do quite well, but it should not contain iron nails; for small specimens a flower-pot might serve. In reply to a suggestion, he would point out that there was no peculiar value in the sand; any porous substance such as powdered carbon, might do as well. Dr. Bather disclaimed any authoritative knowledge; his only merit was that he had noticed the method as one likely to be useful to his colleagues, and had induced Dr. Scharff to prepare the paper.

The dry sand method of cleaning skeletons was, we believe, employed by Sir William Turner of the Medical College at Edinburgh. It was adopted by Dr. Scharff of the Dublin Museum, and later by Mr. Pycraft of the British Museum, by whom it was successfully used for cetaceans. In 1912 the writer saw the results of Dr. Scharff's work in Dublin, and a little later the process in operation at the British Museum. As the work was carried on in the ground adjoining the British Museum, surrounded by dwelling houses, it can readily be seen that the method was inoffensive. (F.A.L.)

The Association then unanimously adopted the following resolution:

> *Resolved*, That the thanks of the Association be tendered to the trustees and officers of the Public Museum of the City of Milwaukee, the Layton Art Gallery, the Art Institute of Chicago, the Field Museum of Natural History, the Chicago Academy of Sciences, and the Chicago Historical Society for their generous hospitality; to the city officials of Milwaukee and Chicago for their cordial welcome and various courtesies; and especially to Mr. Henry L. Ward, Mr. George Raab, Mr. Newton H. Carpenter, Mr. Frank C. Baker, Dr. Oliver C. Farrington, and Miss Caroline M. McIlvaine for the careful arrangements which have made the present meetings so enjoyable to all the members in attendance.

President Gilman then expressed to the Association the pleasure which he had derived from his work with the Association during the past year, and called upon the incoming president to take the chair.

President Farrington.—"Members of the American Association of Museums: I am very happy indeed that you have thought me in any sense worthy to serve in this position. Our organization is so simple and we become so well acquainted in our various excursions that we know there is very little difference between members and officers. Every officer knows he will have the hearty support of every member, and this is all that is necessary for the greatest success of the organization. My only message at this time, therefore, is to express the hope that you will look forward to the coming convention of 1915, and that you will all make arrangements to be there. The feeling should not be whether we can afford to go, but whether we can afford to stay at home and miss the great opportunities which the convention on the Pacific Coast will afford us.

"I trust also that the union of art and science, which has been so admirable a feature of this meeting, will be a permanent feature of our conventions. I am sure that the hearty cooperation of all classes of museums will be conducive to the best results in our work. Museums of all kinds have many problems and many interests in common, and I hope that we shall work together with mutual sympathy and appreciation in all the coming years.

"There being no further business to come before the Association I declare the convention of 1914 adjourned sine die."

APPENDIX

CONSTITUTION OF THE AMERICAN ASSOCIATION OF MUSEUMS

ARTICLE I

NAME

The name of this Association shall be "The American Association of Museums."

ARTICLE II

OBJECT

The object of this Association shall be to promote the welfare of Museums, to increase and diffuse knowledge of all matters relating to them, and to encourage helpful relations among Museums and those interested in them.

ARTICLE III

MEMBERSHIP

All Museums officially represented at the first meeting of this Association, held at the American Museum of Natural History in New York, on May 15, 1906; all persons taking part in the organization of this Association, or who on the above date, or prior thereto, have by letter signified their wish to become members of the Association, shall become Charter Members on payment before the next annual meeting of the Association of the fees hereinafter provided for.

The Members of the Association shall be Active, Associate, Sustaining and Honorary.

Persons actively engaged in the work of Museums may become Active Members on the payment of three dollars per annum, and may become Active Members for Life upon payment of thirty dollars at any one time.

Persons contributing one dollar per annum may become Associate Members.

Each Museum paying not less than ten dollars a year shall be a Sustaining Member of the Association, and through its chief executive officer or a properly accredited representative, shall be entitled to cast a vote on all matters coming before the Association.

Persons distinguished for eminent services, either to the cause of Museums or to this Association, may become Honorary Members. The number of Honorary Members shall be limited to fifteen. When ten Honorary Members have been elected then thereafter not more than two such members may be elected annually.

Active and Sustaining Members only shall have a right to vote, and Active Members only may hold office.

Any Museum or person proposed in writing for Active, Associate, or Sustaining Membership by a Member of the Association, and approved by the Council, upon the payment of the proper fee shall become a Member of the Association.

Any person contributing five hundred dollars or more at any one time shall become a Patron of the Association.

ARTICLE IV

OFFICERS

The officers of the Association shall be a President, a Vice-President, a Secretary, and a Treasurer, and six other persons designated as Councillors, and these ten shall be members of the Council. The President shall serve for two years, and during the two succeeding years shall be ineligible for re-election to the presidency but shall be an ex-officio member of the Council. Two Councillors chosen by the Association shall retire annually, and for one year shall be ineligible for re-election to the same office. An Assistant Secretary may also be elected.

ARTICLE V

COUNCIL

The general control of the affairs of the Association, except as otherwise herein provided, shall be vested in the Council.

ARTICLE VI

ELECTION OF OFFICERS

Officers shall be elected by ballot at the annual meeting.

The Council shall have power to fill any vacancies which may occur in its membership between annual meetings.

ARTICLE VII

MEETINGS

A general meeting shall be held in each calendar year. Special meetings may be appointed by the Association or called by the Council. The time and place of the annual meeting shall be determined by the Association. In order to diffuse a knowledge of Museums and their work, the Association shall meet in a different city or town each succeeding year, unless otherwise determined by the Association.

At the annual meeting papers may be read, matters relating to Museums discussed, and any business relating to the affairs of the Association shall be transacted.

Special meetings may be called by the Council in emergencies, and only matters stated in the call shall be considered at such special meetings.

ARTICLE VIII

PUBLICATIONS

The publications of the Association shall be distributed free to all Sustaining and Active Members who have paid their dues for the year of issue. Associate Members may obtain the Proceedings in paper covers at one dollar, or in cloth binding at one dollar and twenty-five cents.

ARTICLE IX

AMENDMENTS

This Constitution may be amended by a two-thirds vote of the members present and voting at any meeting, provided that every proposed amendment shall be first considered by the Council and be reported by the Council with or without recommendation.

REPORT OF THE TREASURER OF THE AMERICAN ASSOCIATION OF MUSEUMS, PRESENTED AT THE ANNUAL MEETING MILWAUKEE AND CHICAGO, MAY 19–21, 1914

Balance on hand, June 2, 1913	$441.46

RECEIPTS

10	Active memberships for year ending May 15, 1913	30.00
202	Active memberships for year ending May 15, 1914	606.00
4	Active memberships for year ending May 15, 1915	12.00
1	Sustaining membership for year ending May 15, 1913	10.00
1	Sustaining membership for year ending May 15, 1913 (on account).	2.04
41	Sustaining memberships for year ending May 15, 1914	410.00
1	Sustaining membership for year ending May 15, 1914	25.00
4	Sustaining memberships for year ending May 15, 1915	40.00
3	Sustaining memberships for year ending May 15, 1916	30.00
1	Associate membership for year ending May 15, 1913	1.00
11	Associate memberships for year ending May 15, 1914	11.00
	All other receipts, sale of publications, reprints, etc	119.43
	Total receipts	$1737.93

EXPENDITURES

1913				
June	12	Bergdoll Taxicab Co. (motor hire, Philadelphia meeting)	$46.00	
June	12	The Wiegner Printery (printing list of names)	9.00	
June	16	P. M. Rea, Secretary (expenses Philadelphia meeting).	66.80	
June	27	Philadelphia Museums (stationery and printing)	1.50	
July	7	Philadelphia Museums (stationery and printing)	4.75	
July	11	Rena Rowell, Assistant to Secretary (balance of June salary)	11.41	
July	11	E. G. Gaillard (typewriting)	3.50	
July	15	Z. & L. Rosenfield (reporting proceedings)	75.00	
July	15	Daggett Printing Co. (stationery)	5.35	
July	23	P. M. Rea, Secretary (assistant's salary, July)	30.00	
July	25	Philadelphia Post Office (postage stamps)	9.00	
Aug.	13	L. L. Weeks, Assistant Secretary (petty cash)	15.00	
Aug.	26	P. M. Rea, Secretary (assistant's salary, Aug.)	30.00	
		Carried forward	$307.31	$1737.93

1913			
	Brought forward	$307.31	$1737.93
Sept. 4	The Science Press (reprints and express)	3.38	
Sept. 13	W. P. Wilson, Treasurer (notary fees)	.50	
Sept. 24	L. L. Weeks, Assistant Secretary (salary, Sept.)	30.00	
Sept. 30	P. M. Rea, Secretary (petty cash and postage on *Proceedings*)	30.00	
Nov. 21	L. L. Weeks, Assistant Secretary (salary, Oct. and Nov.)	60.00	
Nov. 24	Williams & Wilkins Co. (1000 copies *Proceedings* and reprints)	372.67	
Nov. 24	Daggett Printing Co. (printing)	3.00	
Nov. 25	P. M. Rea, Secretary (freight on *Proceedings*)	6.35	
Dec. 27	L. L. Weeks, Assistant Secretary (salary, Dec.)	30.00	
Dec. 27	L. L. Weeks, Assistant Secretary (petty cash)	10.00	
Dec. 29	Philadelphia Post Office (postage stamps)	5.00	
1914			
Jan. 30	L. L. Weeks, Assistant Secretary (salary, Jan.)	30.00	
Feb. 16	Daggett Printing Co. (stationery)	6.25	
Feb. 16	P. M. Rea, Secretary (petty cash)	20.00	
Mar. 2	L. L. Weeks, Assistant Secretary (salary, Feb.)	30.00	
Mar. 27	Daggett Printing Co. (stationery)	3.00	
Mar. 27	L. L. Weeks, Assistant Secretary (salary, March)	30.00	
Apr. 13	Daggett Printing Co. (stationery and printing)	19.25	
Apr. 13	P. M. Rea, Secretary (postage for notices)	7.00	
Apr. 23	A. A. Clinger (blank book for Treasurer)	.70	
Apr. 27	P. M. Rea, Secretary (postage on special announcements)	6.00	
Apr. 27	L. L. Weeks, Assistant Secretary (salary, April)	30.00	
Apr. 27	Williams & Wilkins Co. (1000 lists of papers)	18.84	
May 6	The M. C. Lilley Co. (badges)	6.16	
May 8	Daggett Printing Co. (stationery and printing)	14.60	
May 15	A. A. Clinger (services for Treasurer)	50.00	
	Total Expenditures		1130.01
	Balance on hand, May 15, 1914		$607.92

W. P. WILSON,
Treasurer.

Examined and found correct:
A. R. CROOK,
F. C. BAKER,
F. L. LEWTON,
Auditing Committee.

MEMBERS OF THE AMERICAN ASSOCIATION OF MUSEUMS[1]

PATRONS

Huntington, Archer M., 15 West 81st Street, New York City.

SUSTAINING MEMBERS

Academy of Natural Sciences of Philadelphia, Philadelphia, Pa.
American Geographic Society, New York City.
*American Museum of Natural History, New York City.
American Museum of Safety, New York City.
American Numismatic Society, New York City.
Arnold Arboretum, Boston, Mass.
*Art Association of Indianapolis (John Herron Art Institute), Indianapolis, Ind.
*The Art Institute of Chicago, Chicago, Ill.
Bernice P. Bishop Museum Trustees, Box 466, Honolulu, T. H.
Boston Society of Natural History, Boston, Mass.
*Brooklyn Institute Museum, Eastern Parkway, Brooklyn, N. Y.
Buffalo Historical Society, Buffalo, N. Y.
Buffalo Society of Natural Sciences, Buffalo, N. Y.
Calgary Museum, Calgary, Alberta, Canada.
*Carnegie Museum, Department of the Carnegie Institute, Pittsburgh, Pa.
*The Charleston Museum, Charleston, S. C.
*The Chicago Academy of Sciences, Lincoln Park, Chicago, Ill.
Cincinnati Museum Association, Cincinnati, Ohio.
City Art Museum, Forest Park, St. Louis, Mo.
Cleveland Museum of Art, Cleveland, Ohio.
Colorado Museum of Natural History, Denver, Col.
*The Corcoran Gallery of Art, Washington, D. C.
Davenport Academy of Sciences, Davenport, Iowa.
Department of Archæology, Phillips Academy, Andover, Mass.
*Deseret Museum, Salt Lake City, Utah.
The Essex Institute, Salem, Mass.
*The Fairbanks Museum of Natural Science, St. Johnsbury, Vt.
*Field Museum of Natural History, Chicago, Ill.
Geological Survey of Canada, Ottawa, Canada.
Germanic Museum, Harvard University, Cambridge, Mass.
Hispanic Society of America, New York City.
Joseph Moore Museum, Earlham College, Earlham, Ind.
Layton Art Gallery, Milwaukee, Wis.
Mattatuck Historical Society, Waterbury, Conn.
*Metropolitan Museum of Art, New York City.
Michigan Historical Commission, Lansing, Mich.
Museo de Historia Nacional, Montevideo, Uruguay.
Museum of the College of Liberal Arts, Northwestern University, Evanston, Ill.

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[1] The asterisk (*) denotes a Charter Member.

*Museum of Fine Arts, Boston, Mass.

Museum of the Grand Lodge of F. and A. M. of Pennsylvania, Masonic Temple, Philadelphia, Pa.

Nebraska State Historical Society, Lincoln, Neb.

*New York Botanical Garden, Bronx Park, New York City.

*New York State Museum, Albany, N. Y.

Peabody Museum, Salem, Mass.

*Pennsylvania Museum and School of Industrial Art, Memorial Hall, Fairmount Park, Philadelphia, Pa.

Pennsylvania State Museum, Harrisburg, Pa.

The Philadelphia Museums, 34th St., below Spruce, Philadelphia, Pa.

*Public Museum of the City of Milwaukee, Milwaukee, Wis.

Springfield Art Museum, Springfield, Mass.

*University Museum, Department of Archæology, University of Pennsylvania, Philadelphia, Pa.

Wadsworth Athenæum, Hartford, Conn.

*Washington State Art Association, Seattle, Wash.

Worcester Art Museum, Worcester, Mass.

LIFE MEMBERS

Clowes, Herbert, Landscape Modeler, Public Museum of the City of Milwaukee, Milwaukee, Wisconsin.

Crook, A. R., Curator, Illinois State Museum of Natural History, Springfield, Illinois.

Graves, F. P., Graves Private Museum, Doe Run, Mo.

Harris, Norman W., Field Museum of Natural History, Chicago, Ill.

*Henshaw, Samuel, Director, Museum of Comparative Zoology, Harvard University, Cambridge, Mass.

*Holland, W. J., Director, Department of the Museum, Carnegie Institute, Pittsburgh, Pa.

*Minot, Charles S., Harvard Medical School, Boston, Mass.

Parrish, Samuel L., Southampton Art Museum, Southampton, Long Island, N. Y.

*Talmage, James E., Director, Deseret Museum, Salt Lake City, Utah.

Thayer, John E., Director, Thayer Museum, Lancaster, Mass.

ACTIVE MEMBERS

*Adams, Charles C., Assistant Professor of Forest Zoology, New York State College of Forestry, Syracuse, N. Y.

Adickes, Thomas W., Assistant Curator, North Carolina State Museum, Raleigh, North Carolina.

Agostini, Serafino, Assistant Preparator, Department of Paleontology, Carnegie Museum, Pittsburgh, Pa.

Aitkin, Helen J., Assistant Curator, Division of Conchology, Central Museum, Brooklyn Institute of Arts and Sciences, Brooklyn, N. Y.

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        Henn, Arthur W., Assistant Curator (*active*).
EARLHAM:
    Earlham College, Joseph Moore Museum (*sustaining*):
INDIANAPOLIS:
    Art Association of Indianapolis (*sustaining*).

IOWA

DAVENPORT:
    Davenport Academy of Sciences (*sustaining*):
        Paarmann, J. H., Curator (*active*).
        Putnam, Edward K., Acting Director (*active*).
IOWA CITY:
    State University of Iowa (*non-member*):
        Dill, Homer R., Director of Museum Exhibit of Vertebrates (*active*).

KANSAS

EMPORIA:
    Kansas State Normal School (*non-member*):
        Thomas, E. H., Taxidermist (*active*).

LOUISIANA

NEW ORLEANS:
    Isaac Delgado Museum of Art (*non-member*):
        Boyle, C. W., Curator (*active*).
    Louisiana State Museum (*non-member*):
        Glenk, Robert, Curator (*active*).

MAINE

AUGUSTA:
    Maine State Museum (*non-member*):
        James, Thomas A., Curator (*active*).

MASSACHUSETTS

AMHERST:
  Amherst College Museum (*non-member*):
    Emerson, B. K., In charge of Geology (*active*).
ANDOVER:
  Department of Archeology, Phillips Academy (*sustaining*):
    Moorehead, Warren K., Curator (*active*).
BOSTON:
  Arnold Arboretum (*sustaining*):
  Boston Society of Natural History (*sustaining*):
    Cushman, Joseph A., Assistant Curator (*active*).
    Jackson, Robert T., Assistant Curator, In charge of Paleontological Collections (*active*).
    Johnson, Charles W., Curator (*active*).
  Children's Museum of Boston (*non-member*):
    Griffin, Delia Isabel, Director (*active*).
  Museum of Fine Arts (*sustaining*):
    Carrington, FitzRoy, Curator of Prints (*active*).
    Elliott, Huger, Supervisor of Educational Work (*active*).
    Fairbanks, Arthur, Director (*active*).
    Flint, Sarah G., Assistant (*active*).
    Gilman, Benj. Ives, Secretary (*active*).
    Paull, Florence V., Assistant (*active*).
  Unattached:
    Slocum, Anna D. (*active*).
    Slocum, Laura (*associate*).
CAMBRIDGE:
  Harvard Medical School (*non-member*):
    Minot, Charles S. (*life*).
  Harvard University, Botanical Museum (*non-member*):
    Goodale, George Lincoln, Honorary Curator (*active*).
  Harvard University, Fogg Art Museum (*non-member*):
    Forbes, Edward W., Director (*active*).
    Wood, Alice M., Assistant in charge of Photographs (*active*).
  Harvard University, Germanic Museum (*sustaining*):
  Harvard University, Museum of Comparative Zoology (*non-member*):
    Barbour, Thomas, Associate Curator of Reptiles and Amphibians (*active*).
    Henshaw, Samuel, Director (*life*).
    Raymond, Percy E. (*active*).
  Harvard University, Peabody Museum (*non-member*):
    Peabody, Charles, Assistant in European Archeology (*active*).
    Putnam, Frederick W., Honorary Director (*active*).
    Willoughby, Charles C., Assistant Director (*active*).
  Harvard University, University Museum (*non-member*):
    Sayles, Robert W., Curator, Geological Department (*active*).
LANCASTER:
  Thayer Museum (*non-member*):
    Thayer, John E., Director (*life*).

SALEM:
  The Essex Institute (*sustaining*):
    Dow, George Francis, Secretary and Curator (*active*).
  Peabody Museum (*sustaining*):
    Brown, C. Emerson, Curator of Vertebrates (*active*).
    Jenkins, L. W., Assistant Director (*active*).
    Morse, Edward S., Director (*active*).
    Robinson, John, Keeper of East India Marine Society Relics (*active*).
SPRINGFIELD:
  Springfield Art Museum (*sustaining*).
WELLESLEY:
  Wellesley College (*non-member*):
    Morse, Albert P., Curator of Zoology (*active*).
WORCESTER:
  Worcester Art Museum (*sustaining*).

MICHIGAN

ANN ARBOR:
  University of Michigan (*non-member*):
    Ruthven, Alexander G., Director, Museum of Zoology (*active*).
  Unattached:
    Gaige, Mrs. Frederick M. (*active*).
DETROIT:
  Detroit Museum of Art (*non-member*):
    Burroughs, Clyde H., Acting Director (*active*).
GRAND RAPIDS:
  Grand Rapids Public Library (*non-member*):
    Ranck, Samuel H., Librarian (*active*).
  Kent Scientific Museum (*non-member*):
    Sargent, Herbert E., Director (*active*).
LANSING:
  Michigan Historical Commission (*sustaining*).
MUSKEGON:
  Hackley Art Gallery (*non-member*):
    Wyer, Raymond, Director (*active*).
PORT HURON:
  Public Library (*non-member*):
    Slenau, Katharyne G., Librarian (*active*).

MINNESOTA

MINNEAPOLIS:
  Institute of Arts (*non-member*):
    Jackson, Margaret T., Director's Assistant (*active*).
ST. PAUL:
  St. Paul Institute (*non-member*):
    Sweeney, Arthur, Secretary (*active*).

MISSOURI

DOE RUN:
    Graves Private Museum (*non-member*):
        Graves, F. P. (*life*).
KANSAS CITY:
    Daniel B. Dyer Museum (*non-member*):
        Jacobs, Mrs. Ophelia, Curator (*active*).
ROLLA:
    School of Mines (*non-member*):
        Cunningham, Jesse (*active*).
ST. LOUIS:
    City Art Museum (*sustaining*):
    Educational Museum (*non-member*):
        Rathmann, Carl G., Director (*active*).
    Missouri Botanical Garden (*non-member*):
        Greenman, Jesse More, Curator of Herbarium (*active*).

NEBRASKA

LINCOLN:
    Nebraska State Historical Society (*sustaining*).
    State Museum (*non-member*):
        Barbour, Erwin Hinckley, Curator (*active*).
OMAHA:
    Omaha Public Library and Museum (*non-member*):
        Tobitt, Edith, Librarian (*active*).

NEW JERSEY

DEMAREST:
    Unattached:
        Ashley, William Bevier (*active*).
NEWARK:
    Newark Museum Association (*non-member*):
        Dana, John Cotton, Secretary and Director (*active*).
        Foster, Helen W., Assistant (*active*).
PRINCETON:
    E. M. Museum (*non-member*):
        Libbey, William, Director (*active*).
    Museum of Princeton University (*non-member*):
        Silvester, Charles F., Curator of Zoology (*active*).
TRENTON:
    New Jersey State Museum (*non-member*):
        Morse, Silas R., Curator (*active*).

NEW YORK

ALBANY:
    New York State Museum (*sustaining*):
        Clarke, John M., Director (*active*).

BROOKLYN:
  Central Museum, Brooklyn Institute of Arts and Sciences (*sustaining*):
    Aitkin, Helen J., Assistant Curator, Division of Conchology (*active*).
    Altman, Frederick, Assistant Taxidermist (*active*).
    Casey, Thomas F., Superintendent of Buildings (*active*).
    Fox, William Henry, Director of Museums (*active*).
    Goodyear, Wm. H., Curator of Fine Arts (*active*).
    Hooper, Franklin W., Director of Institute (*active*).
    Hutchinson, Susan A., Curator of Books (*associate*).
    Miranda, Antonio, Artist (*active*).
    Morris, Mrs. E. L., Docent (*associate*).
    Murphy, Robert Cushman, Curator, Division of Mammals and Birds (*active*).
    Rueff, A. E., Assistant in Art Department (*active*).
  Children's Museum, Brooklyn Institute of Arts and Sciences (*non-member*):
    Gallup, Anna Billings, Curator (*active*).
BUFFALO:
  Albright Art Gallery (*non-member*):
    Sage, Cornelia Bentley, Director (*active*).
  Buffalo Historical Society (*sustaining*):
    Severance, Frank H., Secretary (*active*).
  Buffalo Society of Natural Sciences (*sustaining*):
    Bryant, William L., Custodian of Museum (*active*).
    Cummings, Carlos E., Secretary (*active*).
    Howland, Henry R., Superintendent (*active*).
NEW BRIGHTON:
  Museum of Staten Island Association of Arts and Sciences (*non-member*):
    Hollick, Arthur, Curator-in-chief (*active*).
    Pollard, Agnes L., Curator (*active*).
NEW YORK CITY:
  American Geographic Society (*sustaining*):
    Huntington, Archer M. (*patron*).
  American Museum of Natural History (*sustaining*):
    Akeley, C. E., Taxidermist (*active*).
    Allen, J. A., Curator of Mammalogy and Ornithology (*active*).
    Chapman, Frank M., Curator of Ornithology (*active*).
    Dean, Bashford, Curator of Fossil Fishes (*active*).
    Hood, Ida Richardson, Assistant Librarian (*active*).
    Hovey, Edmund Otis, Curator, Department of Geology and Invertebrate Paleontology (*active*).
    Kunz, George F., Honorary Curator of Gems (*active*).
    Lucas, Frederic A., Director (*active*).
    Lucas, Jannette May (*active*).
    Miner, Roy W., Assistant Curator of Invertebrate Zoology (*active*).
    Sherwood, George H., Assistant Secretary (*active*).
    Tower, Ralph W., Curator of Physiology and Books and Publications (*active*).
    Wissler, Clark, Curator of Anthropology (*active*).
  American Museum of Safety (*sustaining*).

American Numismatic Society (*sustaining*):
  Cooper-Prichard, A. H., Librarian (*active*).
  Huntington, Archer M. (*patron*).
  Wood, Howland, Curator (*active*).
Boy Scouts of America, New York City Council (*non-member*):
  Pollard, Charles Louis, Executive Deputy Scout Commissioner (*active*).
Hispanic Society of America (*sustaining*):
  Huntington, Archer M. (*patron*).
Metropolitan Museum of Art (*sustaining*):
  Baker, Helen J., Cataloger (*associate*).
  Chandler, Anna C., Assistant (*associate*).
  Dean, Bashford, Curator of Arms and Armor (*active*).
  de Forest, Robert W., President (*active*).
  Kent, Henry W., Secretary (*active*).
  Magher, Margaret C., Cataloger, Library (*associate*).
  Robinson, Edward, Director (*active*).
  Wallace, Lucie E., Assistant Librarian (*associate*).
Museum of the Arts of Decoration, Cooper Union (*non-member*):
  Hewitt, Eleanor G., Curator (*active*).
New York Aquarium (*non-member*):
  Townsend, Charles H., Director (*active*).
New York Botanical Garden (*sustaining*):
  Britton, N. L., Director-in-chief (*active*).
  Howe, Marshall A., Curator of Museum (*active*).
  Small, John K., Head Curator of Museums and Herbarium (*active*).
New York Zoological Park (*non-member*):
  Hornaday, William T., Director (*active*).
Russell Sage Foundation (*non-member*):
  Routzahn, E. G., Associate Director, Department of Surveys and Exhibits (*active*).

ROCHESTER:
  Rochester Municipal Museum (*non-member*):
    Putnam, Edward D., Curator (*active*).
  University of Rochester (*non-member*):
    Dodge, Charles Wright, Curator of Botany and Zoology (*active*).
  Ward's Natural Science Establishment (*non-member*):
    Ward, F. Hawley (*active*).

SOUTHAMPTON:
  Southampton Art Museum (*non-member*):
    Parrish, Samuel L. (*life*).

SYRACUSE:
  New York State College of Forestry (*non-member*):
    Adams, Charles C., Assistant Professor of Forest Zoology (*active*).

NORTH CAROLINA

RALEIGH:
  North Carolina State Museum (*non-member*):
    Adickes, Thomas W., Assistant Curator (*active*).
    Brimley, Herbert H., Curator (*active*).

NOVA SCOTIA

HALIFAX:
  Provincial Museum (*non-member*):
    Piers, Harry, Curator (*active*).

OHIO

CINCINNATI:
  Cincinnati Museum Association (*sustaining*):
    Gest, J. H., Director (*active*).
  University of Cincinnati (*non-member*):
    Fenneman, N. M., Professor of Geology (*active*).
    Maddox, Robert D., Curator, Medical Museum (*active*).
CLEVELAND:
  Board of Education (*non-member*):
    McCornack, W. P., Architect (*active*).
  Cleveland Museum of Art (*sustaining*):
    Whiting, Frederic Allen, Director (*active*).
COLUMBUS:
  Ohio State Archeological and Historical Society (*non-member*):
    Mills, William C., Curator and Librarian (*active*).
GREENVILLE:
  Museum of Carnegie Library (*non-member*):
    Katzenberger, George A., Curator (*active*).
OBERLIN:
  Oberlin College, Zoological Museum (*non-member*):
    Jones, Lynds, Curator (*active*).
TOLEDO:
  Toledo Museum of Art (*non-member*):
    Stevens, Mrs. George W., Assistant Director (*active*).

ONTARIO

OTTAWA:
  Geological Survey of Canada (*sustaining*):
    Johnston, R. A. A., Mineralogist and Curator (*active*).
    Smith, Harlan I., Archeologist (*active*).
  Unattached:
    Ami, Henry M., Strathcona Park (*active*).
TORONTO:
  University of Toronto (*non-member*):
    Montgomery, Henry, Head Curator of New General Museum (*active*).

OREGON

PORTLAND:
  Portland Art Association (*non-member*):
    Crocker, Anna B., Curator (*active*).
    Failing, Henrietta H., Late Curator (*active*).

PENNSYLVANIA

ERIE:
- Erie Public Museum (*non-member*):
  - Austin, Thomas L., Curator (*active*).

HARRISBURG:
- Pennsylvania State Museum (*sustaining*):
  - Rothrock, Boyd P., Curator (*active*).
  - Rothrock, Mrs Boyd P., Accessionist and Foliage Worker (*active*).

PHILADELPHIA:
- Academy of Natural Sciences of Philadelphia (*sustaining*):
  - Brown, Stewardson, Curator of Herbarium (*active*).
  - Stone, Witmer, Curator (*active*).
- Drexel Institute Museum (*non-member*):
  - MacAlister, Mary T., Curator (*active*).
- Museum of the Grand Lodge of F. and A. M. of Pennsylvania (*sustaining*):
  - Sachse, Julius F., Curator and Librarian (*active*).
- Pennsylvania Museum and School of Industrial Art (*sustaining*):
  - Barber, Edwin AtLee, Director of Museum (*active*).
  - Stevenson, Mrs. Cornelius, Assistant Curator and Lecturer (*active*).
- The Philadelphia Museums (*sustaining*):
  - Fisher, William L., Assistant Curator (*active*).
  - Schoff, Wilfred H., Secretary and Assistant Treasurer (*active*).
  - Toothaker, Charles R., Curator (*active*).
  - Wilson, W. P., Director (*active*).
- University Museum, Department of Archeology (*sustaining*):
  - Gordon, G. B., Director (*active*).
  - Houston, S. F., Trustee (*active*).
- Wagner Free Institute of Science (*non-member*):
  - Rothermel, John G., Superintendent (*active*).
- The Wistar Institute of Anatomy (*non-member*):
  - Greenman, Milton J., Director (*active*).
  - Perine, Clara N., Assistant to Director (*active*).
  - Stotsenberg, J. MacPherson, Curator (*active*).
- Unattached:
  - Foote, Warren M., Mineralogist (*active*).

PITTSBURGH:
- Carnegie Institute, Department of Fine Arts (*non-member*):
  - Beatty, John W., Director (*active*).
  - Hyett, W. J., Assistant in charge of Galleries (*active*).
- Carnegie Institute, Department of the Museum (*sustaining*):
  - Agostini, Serafino, Assistant Preparator, Department of Paleontology (*active*).
  - Atkinson, D. A., Custodian of Reptiles (*active*).
  - Coggeshall, Arthur S., Preparator-in-chief, Department of Paleontology (*associate*).
  - Courtney, Mrs. Elizabeth D., Assistant (*associate*).
  - Eastman, Charles R. (*active*).
  - Eigenmann, Carl H., Curator of Ichthyology (*active*).

Gittings, Maud J., Custodian of Library (*associate*).
Holland, W. J., Director (*life*).
Hughes, D. C., Assistant, Section of Archeology and Ethnology (*active*).
Jennings, Otto E., Assistant Curator of Botany (*active*).
Kahl, Paul Hugo Isidore, Custodian, Section of Entomology (*active*).
Ortmann, Arnold E., Curator of Invertebrate Zoology (*active*).
Peterson, Olaf August, Field Collector and Preparator of Mammals and Birds (*active*).
Santens, Remi H., Chief Preparator, Taxidermic Laboratory (*active*).
Sterki, Victor, Assistant in Conchology (*active*).
Stewart, Douglas, Assistant to Director (*active*).
Townsend, Louis H., Osteologist (*active*).

READING:
Reading Public Museum (*non-member*):
Mengel, Levi W., Director (*active*).

RHODE ISLAND

PROVIDENCE:
Park Museum (*non-member*):
Madison, H. L., Curator (*active*).
Magoon, Eva W., Assistant (*active*).
Rhode Island School of Design (*non-member*):
Rowe, Louis Earle, Director (*active*).

SOUTH CAROLINA

CHARLESTON:
The Charleston Museum (*sustaining*):
Rea, Paul M., Director (*active*).
Weeks, Laura L., Secretary to the Director (*active*).

SWEDEN

STOCKHOLM:
Ethnographical Museum (*non-member*):
Hartman, C. V., Curator (*active*).

TEXAS

HOUSTON:
Houston Museum and Scientific Society (*non-member*):
Brock, Clarence L., Director (*active*).

URUGUAY

MONTEVIDEO:
Museo de Historia Nacional (*sustaining*).

UTAH

SALT LAKE CITY:
Deseret Museum (*sustaining*):
Talmage, James E., Director (*life*).

VERMONT

BURLINGTON:
  University of Vermont (*non-member*):
    Perkins, George H., Curator of Museum (*active*).
ST. JOHNSBURY:
  The Fairbanks Museum of Natural Science (*sustaining*).

WALES

CARDIFF:
  National Museum of Wales (*non-member*):
    Hoyle, William Evans, Director (*active*).

WASHINGTON

SEATTLE:
  State Museum, University of Washington (*non-member*):
    Hall, F. S., Curator (*active*).
  Washington State Art Association (*sustaining*):
    Berg, George L., Director (*active*).

WISCONSIN

BELOIT:
  Beloit College (*non-member*):
    Emerson, Mrs. Helen B., Curator, Art Department (*active*).
MADISON:
  State Historical Museum of Wisconsin (*non-member*):
    Brown, Charles E., Chief (*active*).
  University of Wisconsin (*non-member*):
    Bumpus, Hermon C., Business Manager (*active*).
MILWAUKEE:
  Layton Art Gallery (*sustaining*):
  Public Museum of the City of Milwaukee (*sustaining*):
    Allen, Eleanor C., Artist (*active*).
    Barrett, S. A., Curator of Anthropology (*active*).
    Brah, Bernard H., Assistant, Department of Anthropology (*active*).
    Brinckley, William J., Assistant, Departments of Geology and Vertebrate Zoology (*active*).
    Clowes, Herbert, Landscape Modeler (*life*).
    Graenicher, Sigmund, Curator of Invertebrate Zoology (*active*).
    Peaslee, Leon D., Curator, Department of Education (*active*).
    Plambeck, R., Photographer (*active*).
    Pope, T. E. B., Associate Lecturer (*active*).
    Rohde, Paul C., Assistant Taxidermist (*active*).
    Shrosbree, George, Chief Taxidermist (*active*).
    Ward, Henry L., Director (*active*).

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